

**A Biological Assessment of Impacts to
Terrestrial and Aquatic Threatened, Endangered and Candidate Species
from Vehicle Beach Access in
Redwood National and State Parks (RNSP) 2010-2015**

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I. INTRODUCTION

The purpose of this biological assessment (BA) is to review Redwood National and State Parks (RNSP or “Parks”) action, vehicle beach access, in sufficient detail to determine if the action may affect any threatened, endangered or candidate species and/or their critical habitats. Redwood National and State Parks is cooperatively managed by the National Park Service (NPS) and California Department of Parks and Recreation/California State Parks (CDPR or CSP). This biological assessment is prepared in accordance with legal requirements set forth under section 7 of the Endangered Species Act (19 U.S.C. 1536 (c), 50 CFR 402.16), and meets the criteria for formal consultation with the United States Fish and Wildlife Service (USFWS). The term of this assessment is for five years or through March 2015.

II. CONSULTATION TO DATE

Redwood National and State Parks obtained a list from the Arcata Fish and Wildlife Service Office website, identifying the endangered, threatened, proposed and candidate species that may be present or may be affected by park activities, dated January 25, 2010 (Document Number 814349931-145251). This list included 22 species currently listed as threatened or endangered, 2 species that are proposed for listing as endangered or threatened, and 4 species that are candidates for listing in Humboldt and Del Norte Counties.

Endangered

Western Lily (*Lilium occidentale*)
Beach Layia (*Layia carnosa*)
Tidewater Goby (*Eucyclobius newberryi*)
Leatherback Turtle (*Dermochelys coriacea*)
Short-tailed Albatross (*Phoebastria albatrus*)
Sperm Whale (*Physeter macrocephalus*)
Blue Whale (*Balaenoptera musculus*)
Humpback Whale (*Megaptera novaengliae*)
Fin Whale (*Balaenoptera physalius*)
Sei Whale (*Balaenoptera borealis*)

Threatened

Oregon Silverspot Butterfly (*Speyeria zerene hippolyta*)
California Coastal Chinook Salmon (*Oncorhynchus tshawytscha*)
Northern California Steelhead (*Oncorhynchus mykiss*)
Southern Oregon/ Northern California Coho Salmon (*Oncorhynchus kisutch*)
Green Sturgeon (*Acipenser medirostris*)
Green Turtle (*Chelonia mydas*)
Olive Ridley Sea Turtle (*Lepidochelys olivacea*)
Loggerhead Turtle (*Caretta caretta*)
Northern Spotted Owl (*Strix occidentalis caurina*)

Marbled Murrelet (*Brachyramphus marmoratus*)
Western Snowy Plover (*Charadrius alexandrinus nivosus*)
Steller Sea Lion (*Eumetopias jubatus*)

Proposed

Black Abalone (*Haliotis cracherodii*)
Southern Eulachon DPS (*Thaleichthys pacificus*)

Candidate

Mardon Skipper (*Polites mardon*)
Xantu's Murrelet (*Synthliboramphus hypoleucus*)
Yellow-billed Cuckoo (*Coccyzus americanus*)
Pacific Fisher (*Martes pennanti*)

Critical habitat was designated for eleven species on the list. Of the eleven, critical habitat for four species occurs within the parks. These species are chinook salmon, coho salmon, steelhead, and the marbled murrelet. Marbled murrelet critical habitat occurs in two units; unit CA-02-a includes Jedediah Smith Redwoods and Del Norte Coast Redwoods State Parks and unit CA-02-b includes Prairie Creek Redwoods State Park (PCRSP). Critical habitat for the marbled murrelet does not occur on federal parklands. Critical habitats for the Oregon silverspot butterfly, tidewater goby, green sturgeon, leatherback turtle, northern spotted owl, western snowy plover, and Steller sea lion are not designated within the parks.

Consultation to Date

Informal consultation on vehicle beach access originally began in the fall of 2000 and resulted in a BA and Letter of Concurrence (LOC; dated 12 June 2001, Ref. No.1-14-01-953) on the action that was valid through March 2002. Discussions with USFWS during that consultation focused primarily on potential impacts to western snowy plover habitat and California brown pelicans (*Pelecanus occidentalis californicus*) from vehicles driving on park beaches. We agreed that driving on the wave slope, as defined on the vehicle beach access permits, could result in vehicles occasionally driving in or near suitable snowy plover habitat. At that time snowy plovers had not been detected on park beaches in approximately 20 years, therefore these actions were determined not likely to adversely affect the snowy plover or the brown pelican.

Informal consultation regarding vehicle beach access occurred again in 2002. That consultation resulted in clarifications and wording changes to the vehicle beach access permits. It also included the potential for use of all-terrain vehicles (ATVs) by park staff when conducting beach surveys, if necessary. A LOC was received on this action dated 21 May 2002 (Ref. No.1-14-01-953) stating that it was not likely to adversely affect the snowy plover, brown pelican, or beach layia and was valid through 2006. The concurrence letter stated that if plovers were detected on park beaches, then consultation would be reinitiated. The appearance of snowy plovers on Gold Bluffs Beach in January, 2004 and subsequent reproduction in May of 2004 triggered reinitiation and formal

consultation that resulted in a BA amendment and Biological Opinion (BO; received 12 April 2006, Ref. No.8-14-2001-0953). An incidental take statement was issued, and the Parks were required to fully implement all measures to minimize impacts described in the project description of the BA and BO. The 2006 amendment to the vehicle beach access consultation expired March 2008. In 2008, formal consultation was reinitiated resulting in a BA and BO (Ref. No. 8-14-2001-0953, 81331-2008-F-031), which is due to expire March 2010. For a detailed summary of the consultation history, see Appendix A.

Current Consultation

The renewal of formal consultation for vehicle beach access was discussed at an interagency consultation team (ICT) meeting on November 10, 2009. Most of the proposed actions from the 2002 BA/2005 amendment and the 2008 BA would remain essentially unchanged. However, some modifications, relating to the duration of the BA/BO and changes with the vehicle beach access permitting process (see Current Management Direction below), were discussed during the ICT meeting.

III. CURRENT MANAGEMENT DIRECTION

Vehicle Beach Access Permits

The legislative history of the 1968 Redwood National Park enabling legislation (*House of Representatives Conference Report No. 1890*, September 11, 1968) recommended that the one-quarter mile strip of offshore submerged lands be included within the National Park boundary for the allowed continuation of commercial and sport fishing. The RNSP *General Management Plan/General Plan* (GP/GMP) provides direction regarding vehicular access and the issuance of access permits for the purposes of commercial fishing, as well as access by Native Americans for traditional activities. Under the GP/GMP, vehicle use associated with commercial surf fishing will continue by a renewable, nontransferable annual permit only. Only permits issued between March 1996 and September 1, 1999, will be renewed, no new permits will be issued, and any permit not renewed in a given year will be terminated. Vehicle use on beaches in connection with traditional Native America activities, that are consistent with the purposes of the parks are to continue at Gold Bluffs Beach in perpetuity. Permitted vehicular access at PCRSP is authorized under CDPR, North Coast Redwoods District Order #2-635-14. Vehicle access permits issued for sport fishing for the mobility impaired are to be phased out when the last permit under the GP/GMP expires.

Changes in Vehicle Beach Access Permits

Public Law 109-362 section 10, approved October 17, 2006 states:

SEC. 10. CONTINUATION OF TRADITIONAL COMMERCIAL SURF FISHING, REDWOOD NATIONAL AND STATE PARKS.

(a) AVAILABILITY OF LIMITED NUMBER OF PERMITS.—For the sole purpose of continuing traditional commercial surf fishing, the Secretary of the Interior shall permit the right of entry for

authorized vehicle access onto the wave slope area at that area known as Gold Bluffs Beach, Prairie Creek Redwoods State Park, and that portion of the beach north and south of Redwood Creek in Redwood National and State Parks. The number of permits issued under the authority of this section shall be limited to the number of valid permits that were held on the date of enactment of this Act. The permits so issued shall be perpetual and subject to the same conditions as the permits held on the date of the enactment of this Act.

(b) WAVE SLOPE AREA DEFINED.—In this section, the term “wave slope area” refers to the area that has been wet by the wave action of the previous high tide, but does not include any vegetated areas.

Since Public Law 109-362 was passed questions have been raised regarding the law and its bearing to state lands within RNSP, specifically Gold Bluffs Beach. In *Salsedo v. California Department of Parks and Recreation*, the court stated “*Nonetheless, the fact that the two agencies have integrated their operations in this manner does not alter the fact that Gold Bluffs Beach remains within the jurisdiction of the State of California and that CDPR has jurisdiction over that beach and the statutory authority to grant permits for vehicle access to the beach. CDPR may agree to utilize standards and follow procedures that have been adopted in consultation with NPS and that correspond to the standards and procedures applied to the federal park land, but the state parks remain within the jurisdiction of the state and CDPR remains bound by the mandates of state law not inconsistent with federal law, and by the orders of California courts.*” Further, court documents state “*And, as made unmistakably clear in the portions of the Congressional Record quoted above, Public Law No. 109-362 was not intended to affect CDPR’s authority in this respect. The federal legislation directed NPS to discontinue its plan to phase out access permits to Gold Bluffs Beach. This congressional directive may or may not apply to CDPR, an issue we need not resolve at this point, but it certainly did not purport to remove from CDPR its fundamental authority over the issuance of permits for access to the state lands.*” As such, vehicle access permits issued for the portion of beach north and south of Redwood Creek are subject to Public Law 109-362 section 10. Vehicle access permits issued for Gold Bluffs Beach by CDPR and for Crescent Beach by NPS will continue as directed under the GP/GMP.

Issuance of Section 10 permits

Vehicle access permits issued for the portion of beach north and south of Redwood Creek will be perpetual and subject to the same condition as on the date of enactment of Public Law 109-362 section 10. Seventeen commercial fishing beach access permits were held on the date of enactment. The number of permits for commercial fishing beach access under the new legislation will not change, however, the actual permit holders will change over time due to non-renewal, death of the permit holder, or revocation because of permit violations. Those 17 permits cannot be sold or otherwise transferred by an existing permittee to another individual.

Section 10 permits will continue to be renewed each season to existing permittees, assuming the permittee requests the permit and has met all permit conditions for the previous and upcoming fishing season, including timely submittal of fishing logs. Persons offered a permit that has become available through forfeiture, revocation, or

death, will be chosen by a process developed by the NPS which seeks to achieve the intent of the legislation, which is to continue the practice of commercial surf fishing. No future permits will be issued to co-permittees or joint permittees and no substitution or addition of co-permittees will be allowed following the issuance of the permit. Due to the long history of Yurok conducting traditional activities along the beach, and in light of the general trust responsibilities of the federal government toward Native Americans, 4 of the 17 Section 10 permits will be set aside as they become available, to be issued only to Yurok Tribal members. RNSP will work with the Yurok Tribal Council to develop a process to select individual permittees. Such permittees will be required to comply with all permit conditions applicable to other Section 10 permits. If any such reserved permit cannot be filled within a reasonable time due to lack of qualified Yurok Tribal member, the permit(s) will then be offered to non-tribal members through a structured process that is yet to be determined.

IV. DESCRIPTION OF THE PROPOSED ACTION

A. ACCESS FOR COMMERCIAL FISHING, SPORT FISHING FOR THE MOBILITY IMPAIRED, AND NATIVE AMERICAN TRADITIONAL ACTIVITIES

The action area includes four beaches within RNSP accessible by vehicles (see Appendix B). The four beaches are, from south to north, Freshwater Spit Beach between Gyon Bluff and the Redwood Creek mouth; Mussel Beach between the Redwood Creek mouth and Mussel Point (Freshwater Spit and Mussel Beaches together are referred to as “the beaches north and south of Redwood Creek”); Gold Bluffs Beach between Mussel Point and the north end of Carruther’s Cove; Crescent Beach from the Crescent Beach overlook north to the National Park boundary. These beaches are accessed via designated access points and with one exception (Crescent Beach), locked gates. There are three access points along Freshwater Spit Beach, one access point at Mussel Beach and one access point at Gold Bluffs Beach. Crescent Beach is accessed at one point along Del Norte County’s South Beach, which borders Crescent Beach to the north.

1. Permit Systems Associated with Vehicle Beach Access

a. Commercial Fishing

To obtain vehicle beach access commercial fishers must possess a special use permit and California Department of Fish and Game commercial fishing license. The permit-year runs from 1 April of the current year through 31 March of the following year, and permits are renewable throughout that entire period.

Beaches north and south of Redwood Creek: The permit system for these beaches is administered by the National Park Service at the South Operations Center (SOC) in Orick (see Appendix C-1 for an example permit). Based on the authority of Public Law 109-362, section 10, plus the two extra permits “grandfathered” by RNSP under the old system (see Section III above); a maximum of 17 permits could be re-issued to commercial fishers for access to

beaches north and south of Redwood Creek. There were 14 permits issued for this activity in 2008 and 2009 respectively.

Gold Bluffs Beach and Crescent Beach: The permits for these beaches are administered by CDPR staff (Gold Bluffs Beach) and NPS staff (Crescent Beach) at SOC and at Redwood National Park headquarters in Crescent City, respectively (see Appendix C-2 and C-3 for example permits). Issuance of special use permits for commercial fishing access is being phased out at Gold Bluffs Beach and Crescent Beach under direction of the GP/GMP. Under the GP/GMP, only those commercial fishers that held a permit issued between March 1996 and September 1, 1999 were allowed to continue in the vehicle beach access permit program. Those permits not renewed prior to the end of the current permit year (31 March) are considered expired and will not be reissued at a later date. Under this system, permits will eventually be phased out. In 2008 and 2009 respectively, there were 14 and 14 commercial fishing permits issued for Gold Bluffs Beach and 13 and 10 commercial fishing permits issued for Crescent Beach.

b. Sport Fishing for Mobility Impaired Persons

To obtain vehicle beach access, sport fishers that have satisfactorily demonstrated proof of permanent mobility impairment may obtain a permit that may be renewed annually. Permits are issued at any time of year, upon request and there are no restrictions on the number of permits that may be issued in a given year.

Beaches north and south of Redwood Creek: The National Park Service at the South Operations Center (SOC) in Orick administers sport fishing access permits (see Appendix C-4). No permits were issued in 2008/2009 to sport fishers for access to the beaches north and south of the Redwood Creek mouth. The NPS plans to discontinue issuing this type of permit when the last GP/GMP commercial fishing permit expires.

Gold Bluffs Beach: No permits of this type are issued for Gold Bluffs Beach.

Crescent Beach: The NPS Chief Ranger at Crescent City administers sport fishing access permits (see Appendix C-5). During 2009, 4 permits were issued to mobility impaired sport fishers for access to Crescent Beach. The NPS plans to discontinue this type of permit when the last GP/GMP commercial fishing permit expires.

c. Yurok Native American Traditional Activities

Traditional activities access permits are issued only on Gold Bluffs Beach to members of the Yurok tribe for traditional food gathering for personal use (see Appendix C-6 for an example permit). Yurok tribe members must renew their permits annually through a system administered by CDPR at SOC. All permit holders must possess a valid sport-fishing license and have that license in their possession when driving on the beach. There are no plans to phase out this type of permit, and there are no restrictions on the number of permits that may be issued in a

given year. During 2008 and 2009 respectively, 2 permits of this type were issued. This number is expected to remain relatively constant based on past levels of demand for these permits.

2. Fishing Activity Associated with Vehicle Beach Access

a. Commercial Fishing

Peak smelt runs occur at night from March through June, and during the day from May through August. Commercial surfperch season is open every month except May, June and July, with most fishing within the parks occurring during the 2 months prior to and after the closure. As a rule, fishing begins approximately one hour after the high tide begins to recede. After accessing the beach, fishers may travel directly to a location where fishing is known to be good, but in some cases traversing the wave slope is necessary to determine where fish are running. Because of the schooling behavior of the fish, it is not unusual for more than one vehicle to be parked in the same area of the beach where fish are being caught. Fishing is done from the beach with a pole for surfperch or in the tidal zone with a net for smelt. Commercial fishers transport catches, which may be up to one ton of fish, in their vehicles. During peak fish runs, there may be 2-6 vehicles on the beach during some portion of each day or night when fish are being caught (see section VI).

b. Sport Fishing for Mobility Impaired Persons

Sport fishers that are mobility impaired may be present on Crescent Beach and/or beaches north and south of Redwood Creek at any time of year. Sport fishing is allowed year round, however, most of the activity associated with sport fishing and vehicle beach access occurs during the months of May through September. Sport fishers are allowed to have one other person, as an attendant accompanying them in their vehicle, to assist with sport fishing activities. It is not known how often sport fishers access the beach for this activity. Sport fishing, by its nature, is a daytime activity and although access is not restricted at night, the conditions of the permit require that a permittee be actively engaged in fishing when accessing the beach by vehicle.

c. Traditional Activities

Yurok Native Americans may be present on Gold Bluffs Beach at any time of year and typically access the beach for the purpose of catching smelt and surfperch using traditional methods. Therefore, most Yurok activities on the beach and vehicle beach access take place from March through August, when the fish are most active, including at night. Occasionally, Yuroks collect mussels along the southern portion of Gold Bluffs Beach, but this activity is infrequent. It is not known how often Yuroks access the beach for their activities.

3. Wood Gathering Associated with Vehicle Beach Access

Wood gathering for firewood is allowed on the beaches north and south of Redwood Creek and Crescent Beach for mobility impaired sport fishing permit holders, and at

Crescent Beach for commercial fishing permit holders. However, the amount of wood gathering allowed is limited to personal use only and fires are required to be either in established fire rings or on the wave slope. Permittee's are not allowed to drive vehicles above the waveslope to collect firewood. Firewood gathering is not allowed on Gold Bluffs Beach.

B. VEHICLE BEACH ACCESS BY ONDUTY PARK STAFF AND CONTRACTORS

Visitor Services and Resource Protection officers (park rangers) access RNSP beaches using trucks or ATVs when necessary to adequately perform patrols. Rangers also use vehicles to access beaches where known or suspected violations of park regulations are occurring, or to assist in an emergency. There is no limit set on the frequency with which park rangers may access the beach; the amount of access is dependent upon the season, available staffing, amount of visitor activity, amount of illegal activity, and emergency response needs. A rough estimate would be between 1-5% of all annual vehicle beach access is currently by park rangers. All park rangers accessing the beach with vehicles remain on the wave slope and abide by the same speed limits as set forth in the beach access permit conditions.

Resource Management staff may need to access RNSP beaches using 4-wheel drive vehicles or ATVs for activities related to snowy plover management (e.g. distribution and abundance monitoring, nest checks, egg floating, banding, installation of symbolic fencing). This type of access would not be limited, and all conditions relative to driving only on the wave slope and maintaining required speed limits would apply. Additionally, Resource Management staff would attempt to minimize vehicle beach access to the greatest extent possible by limiting it to areas of the beach that would be difficult to reach on foot in a timely manner. Vehicle beach access for specific projects, including the use of excavators or other heavy equipment (e.g. exotic beach vegetation eradication) will be included in a biological assessment associated with the specific project or program.

C. PLOVER MANAGEMENT

1. Routine Surveys in the Apparent Absence of Snowy Plovers on Park Beaches

Redwood National and State Park staff conduct snowy plover and beach carcass surveys on all accessible beaches within the parks except Klamath Beach (Table 1). Snowy plover distribution and abundance surveys are, at a minimum, conducted monthly (± 4 days of the 15th) during the winter period (Oct. 1 – Feb. 28) and twice/monthly (± 4 days of the 15th) during the breeding season (March 1 – Sept. 30), with the exception of Crescent Beach and Mussel Beach, which are surveyed monthly during the breeding season. Beach carcass surveys are conducted simultaneously with plover surveys only during the month end surveys.

Table 1. Summary of survey type (plover or carcass) and months they are conducted.

BEACH	SNPL (2/month)	SNPL (1/month)	Carcass (1/month)
Freshwater	March- August	September - February	March-October
Mussel	None	March- September	March-October
Gold Bluffs n. of Major Crk	March- August	September - February	March-October
Gold Bluffs s. of Major Crk	March- August	September - February	March-October
Crescent	None	March- September	March-October

2. RNSP Snowy Plover Management Strategy

Snowy plover management is currently guided by *Redwood National and State Parks Staff Responsibilities and Management Strategy for Western Snowy Plovers* (March 2010). The Strategy provides direction to park staff and assist park managers in making timely decisions that provide some level of protection for this species. The following sections (Section 3. below) were primarily copied from the management strategy.

3. Plover Management and Protection

Wintering Plovers: When snowy plovers are detected during the winter period (Oct. 1 – Feb. 28), the following management actions will be implemented. Table 2 (below) summarizes the management actions for wintering snowy plovers based on the date, location, and number of plovers. If two or more plovers are detected within 0.25 mi of a high visitor use area October 1 – January 31, or two or more plovers are detected during February, then surveys efforts will increase to twice/monthly and snowy plover educational material will be posted at access points. From 1 January through 28 February, the vehicle speed limit will be restricted to 10 mph when adult plovers are present. If 2 or more plovers are detected within ¼ mile of a high visitor use area on 2 consecutive surveys in February, managers will designate a temporary winter protection area (WPA). Regulatory signs and symbolic fencing will be used to designate the WPA, which could extend up to 0.25 mi north and south of the plovers, excluding the wave slope, and including the sandy beach area up to 1,000 ft (305 m) inland from the wave slope. No public access would be allowed within the WPA, but the wave slope adjacent to the WPA would still be accessible to vehicle traffic. Additionally any incidental report

of a snowy plover would trigger a visit to the beach by a trained plover surveyor. No WPA were established in 2008 or 2009.

Table 2. RNSP protective measures for wintering snowy plovers.

WINTER	October 1– January 31	February 1– 28/29
2 or more plovers in low use area	- Continue monthly monitoring	- Increase monitoring to 2 surveys/month - Post educational signs at access points
2 or more plovers in high use area	- Increase monitoring to 2 surveys/month - Post educational signs at access points - Restrict activities (below)	- Increase monitoring to 2 surveys/month - Post regulatory signs at access points - Restrict activities (below)

Breeding Season Plovers: Table 3 summarizes the management actions that will be implemented when snowy plovers are detected during the breeding period (1 March – 30 September), on RNSP beaches. Snowy plovers detected during the breeding season would trigger increased monitoring to look for evidence of nesting. If two or more plovers are detected within 0.25 mi of a high visitor use area, managers will designate a temporary plover protection area (PPA). Regulatory signs and symbolic fencing will be used to designate the PPA, which could extend up to 0.25 mi north and south of the plovers, excluding the wave slope, and include the sandy beach area up to 1,000 ft (305 m) inland from the wave slope. No public access would be allowed within the PPA, but the wave slope adjacent to the PPA would still be accessible to pedestrian and vehicle traffic. No PPA's were established in 2008 or 2009, as only one snowy plover was observed during the breeding period on two occasions in 2008 and one occasion in 2009.

If nesting occurs, monitoring would be further increased as necessary to monitor nest fate and band chicks. To protect nest(s), regulatory signs and symbolic fencing will be used to designate a temporary nest protection area (NPA). The NPA excludes the wave slope and includes the sandy beach area up to 1,000 ft (305 m) inland from the wave slope. No human access would be allowed within the NPA, other than 10(a)1(A) permitted WSP surveyors. Vehicles passing through a NPA along the wave slope will be required to travel at a speed limit of 5 mph. Authorized personnel with the appropriate level of permitting will erect predator exclosures around snowy plover nests if necessary.

The entire beach segment will be closed to night-time driving when plover chicks are present. Restrictions on night-time driving will begin on or before the date that hatching begins and will continue until the chicks have fledged. Chicks are considered fledged at 35 days of age, or when observed in sustained flight for at least 50 feet whichever occurs first. When chicks are present there will be increased monitoring to document movements of the brood along the beach. Signs will be used to designate a temporary brood protection zone (BPZ) until the chicks fledge. The BPZ could extend up to four miles north and south of the nest site (USFWS 2007). The BPZ includes the wave slope and the sandy beach area up to 1,000 ft (305 m) inland from the wave slope. Regulatory

signs and symbolic fencing will be used to designate the north and south boundaries of the BPZ. Within the entire BPZ the beach will be closed to dogs, horses, and kite flying, but open to human access. The waveslope adjacent to the BPZ will be accessible and open to pedestrian travel and daytime vehicle traffic restricted to a 5 mph speed limit. Restrictions on vehicle speed limits will begin as soon as a nest(s) or chick(s) are discovered and will continue until the chicks have fledged. If broods are detected within ¼ mile of a high visitor use area, managers will designate a temporary brood protection area (BPA), depending on the brood's proximity to, and the potential for, human disturbance. Regulatory signs and symbolic fencing will be used to designate the BPA, which could extend up to ¼ mile north and south of the brood, excluding the waveslope, and include the sandy beach area up to 1,000 feet inland from the waveslope. No human access would be allowed within the BPA, other than 10(a)1(A) permitted WSP surveyors, but the waveslope adjacent to the BPA would still be accessible to pedestrians and vehicles limited to 5 mph. Pedestrian travel above the waveslope within the BPA would be allowed along marked corridors if the BPA significantly overlaps a high visitor use area.

Table 3. RNSP protective measures for snowy plovers during the breeding season..

NESTING	Plovers Present (Mar 1-Aug.31; any number)	Nesting confirmed	Broods Present
Monitoring	- Increase monitoring to weekly (to track breeding plovers and find scrapes/nests)	- Increase monitoring to > once per week if necessary (to monitor nest fate) - Band adults (if needed) & juveniles	- Increase monitoring to > once per week if necessary (to monitor brood movements)
Education	- Post education and regulation signs at access points	- Post education and regulation signs at access points - Snowy Plover volunteer "corps" for education	- Post education and regulation signs at access points - Snowy Plover volunteer "corps" for education
Zones and Restrictions	- Restrict activities (see <i>above</i>) - Post regulatory signs at protection zone	- Restrict activities (see <i>above</i>) - Post regulatory signs at protection zone - Symbolic fencing - Predator exclosures/control	- Restrict activities (see <i>above</i>) - Post regulatory signs at protection zone - Symbolic fencing

4. Permittee Education and Compliance

Commercial beach fishers accessing the beaches north and south of Redwood Creek and Gold Bluffs Beach and Yurok permittees are required to attend a training session that covers the biology, ecology and behavior of the western snowy plover and also covers

identification, threats to the species and habitat, regulatory status, and other pertinent information. Information about temporary restrictions due to the presence of snowy plovers will also be mailed to existing beach access permit holders by the NPS or CDPR permit administrator at SOC. Law Enforcement (LE) rangers also will contact and inform vehicle beach access permit holders about any temporary restrictions associated with the presence of snowy plovers, nests, and broods on park beaches.

All commercial beach fishers and Yurok permittees are required to keep a log of all beach trips to be submitted on a quarterly basis that will include the permittee's name, location, date, time entered and exited the beach, and catch data. These logs (see Appendix D) will be submitted to the NPS or CDPR permit administrator at SOC for those commercial fishers accessing the beaches north and south of Redwood Creek and Gold Bluffs Beach, and for Yurok traditional use permittees. The logs will be submitted to the NPS Chief Ranger at park headquarters in Crescent City for those commercial fishers accessing Crescent Beach. Each permittee has the responsibility to supply copies of their quarterly beach access log to the NPS permit administrator at SOC, Orick, in a timely manner (see section 6 below).

5. Enforcement

Law Enforcement rangers will continue to enforce existing regulations regarding beach access and enforce any temporary restrictions within identified plover protection zones. Rangers will contact the CSP and NPS designated snowy plover leads as soon as possible regarding compliance issues on park beaches, noting the date, time, location, and type of activity.

Beaches north and south of Redwood Creek are patrolled by National Park Rangers and California State Park Rangers. During the summer visitor season (May-September), rangers patrol Freshwater Spit from the adjacent highway pull off area weekly, occasionally patrolling the beach north of Redwood Creek on foot or using an ATV. Occasionally, rangers perform surveillance and patrols at night. In the off-season, rangers also patrol by the above means, but on a much more infrequent basis, depending on staffing levels. Education and verbal warnings, citation issuance, permit revocation or arrest are forms of enforcement actions that may be taken for observed permit violations. When plovers occur on these beaches, patrols by LE rangers would be increased to the level that staffing allows, but would likely not change significantly from current levels. For 2008-2009, regular patrols occurred on almost a daily basis by NPS south district rangers. There were no observed unauthorized vehicle beach access activities by commercial fishermen or visitors. There were no compliance issues or citations issued to commercial fishermen.

Gold Bluffs Beach is patrolled by State Park Rangers and National Park Rangers. Because of the length of this beach, patrols are done almost exclusively by truck or ATV. In late spring and summer, coincidental with increased access by commercial beach fishers and visitors, the ranger usually patrols the beach once per month. During the winter months, when fishing activity and visitor use are low relative to the spring and

summer, the beach is usually not patrolled. Education and verbal warnings, citation issuance, permit revocation or arrest are forms of enforcement actions that may be taken for all observed permit violations. When plover nests or broods are present on Gold Bluffs Beach, patrols by the ranger would be increased to the level that staffing allows, but would likely not change significantly from current levels. The CDPR Gold Bluffs Beach ranger patrolled the entire beach by vehicle four times during 2009, and did 15 foot patrols south of Fern Canyon. There were no visitor compliance issues discovered during these patrols. There were no compliance issues or citations issued to commercial fishermen. Patrol efforts were similar in 2008 and no citations were issued.

Crescent Beach is patrolled by National and State Park Rangers. Rangers are at Crescent Beach overlook on a frequent (several times per week) basis to observe vehicle use and other activities on the beach. If an unauthorized vehicle is observed, or any vehicle is observed beyond the wave slope or not apparently engaged in fishing activities as defined on the permit, the vehicle operator is approached by the ranger. Education and verbal warnings, citation issuance, permit revocation or arrest are forms of enforcement actions that may be taken for all observed permit violations. When plovers occur on these beaches, patrols by LE rangers would be increased to the level that staffing allows, but would likely not change significantly from current levels. For 2008 and 2009 regular patrols of the area were conducted by NPS north district rangers. There were no observed unauthorized vehicle beach access activities by commercial fishermen or visitors. There were no compliance issues or citations issued to commercial fishermen.

6. Reporting

Each commercial fishing and Yurok traditional use permittee has the responsibility to supply copies of their quarterly beach access log to the NPS chief ranger at Crescent City (for Crescent beach commercial fishers only) or the NPS or CDPR permit administrator at SOC, Orick, in a timely manner. The NPS permit administrators at Crescent City and Orick will send form letters to all commercial and traditional use permittees prior to the quarterly deadlines reminding the permittees that their logs will be due. Upon failure of a permittee to meet the quarterly deadline, a warning letter will be sent advising them that they have not met the obligations of their permit. Failure to provide beach access log information will result in either the suspension of the permit until the information is provided, or revocation of the permit should noncompliance be continual. All commercial fishing and Yurok traditional use permittees submitted beach access logs during the 2008-2009 period. Not all logs were received by the original date requested, however, upon being contacted by permit administrators, logs were submitted in a timely manner.

Personnel from Resource Management (NPS and CSP) will continue to record information on vehicles and vehicle track presence while conducting snowy plover and beach carcass surveys. Information about violations and observations recorded during plover surveys will be presented to the USFWS in an annual report. Direct observations of vehicles outside of permitted areas, or observations of vehicles traveling at a rate of speed exceeding the maximum allowed would be reported immediately to the appropriate

law enforcement rangers. If vehicle tracks outside of the permitted areas are documented on $\geq 50\%$ of the plover surveys, then a letter will be sent to all permit holders that permit conditions are being violated, and a temporary suspension of beach access may occur if observations of vehicle tracks outside of permitted areas continues. Based on results from the 2008 and 2009 VBA Annual Report submitted to the USFWS, vehicle tracks outside of the permitted area was not observed on any beach beyond the threshold of $\geq 50\%$. Consultation would be reinitiated if the disappearance of eggs, nest abandonment, or evidence of mortality of adults or chicks appears to be related to any authorized or unauthorized vehicle beach access activity.

Rangers (NPS and CSP) are required to fill out a Beach and Dunes Patrol Log documenting the date and time they patrolled the beach, the area patrolled, and any compliance issues noted, fisher contacts, or citations issued. The Beach and Dunes Patrol Log in its entirety is to be submitted to RNSP plover leads by 31 September of each calendar year. Results from the 2008 and 2009 Patrol Logs are summarized above under the Enforcement section.

V. STATUS AND DISTRIBUTION OF LISTED SPECIES

Because the activities described in this assessment occur strictly on the beach, only those species on the park list of T&E species that are associated with beach habitat will be discussed. The western snowy plover, beach layia and associated habitats occur on park beaches. The tidewater goby has the potential to occur in some locations along park beaches. The four listed species of sea turtles and the short-tailed albatross are not included as they are typically associated with the pelagic environment in this region, and very rarely occur within the park.

1. Western Snowy Plover (*Charadrius alexandrinus nivosus*), Threatened

A. Species Account

The 2006 statewide survey detected approximately 1,900 snowy plovers (J. Watkins pers. comm. in Colwell et al. 2006), well below the 3,000 bird recovery goal for California (USFWS 2007). Colwell et al. (2006) calculated there were approximately 60 breeding adults in Humboldt County each year in the period of 2001-2006, in comparison for the period of 2007-2009, there was an estimated 30, 37, and 19 breeding adults respectively. In 2009 only 19 plovers bred in all of Recovery Unit 2 (RU2), which includes Mendocino, Humboldt, and Del Norte counties. Also, in 2009 productivity was the second lowest in RU2 for the nine years since intensive monitoring began (9 juveniles fledged).

In January of 2004, two snowy plovers were detected on Gold Bluffs Beach for the first time since the mid-1980s. Over the next few months between one and three adult plovers were observed during surveys, however, leg bands indicated that at least five different individuals were present at one time or another. On 24 May 2004, an adult with two newly-fledged chicks were observed; this nest was missed by surveyors despite the effort

of regular bi-weekly surveys taking place. There were 2 adult plovers associated with the chicks (male and female). However, the female left the area within 1 week of the nest discovery. The male and his chicks were monitored regularly until one chick fledged on 23 June. The fate of the second chick was unknown; all three birds were observed for the last time in the brood area on 9 June, and the adult male was last seen on 16 June, accompanied by a single chick. This male was observed later in the season in Oregon attending another nest. Snowy plovers returned to Gold Bluffs Beach in January of 2005 and were observed regularly into the breeding season. Based on color-banded individuals and the number of unbanded birds seen at one time, there were least eight different individuals present, with seven the maximum number observed during a single day's observation. A pair of plovers nested in early May 2005 but for unknown reasons the nest failed a few days before the estimated hatch date. There were no other plovers detected after the nest failed until November of 2005. All but two of the 2004-2005 known locations of snowy plovers on Gold Bluffs Beach were in the area between Squashan Creek and about 0.5 mi north of Fern Canyon; one of the other locations was south of Espa Creek (in 2004) and one was in front of the Gold Bluffs Beach Campground (in 2005).

As was the case during the first 2 winters (03-04, 04-05) of plover reoccupation, the area north of Fern Canyon has continued to be occupied by adult plovers during the winters of 05-06 (8), 06-07 (9), 07-08 (3), 08-09 (3) and 09-10 (4). No known snowy plover breeding attempts have occurred at Gold Bluffs Beach since the 04-05 breeding seasons. However, up to 5 plovers were present through March of 2006, and up to 3 were present until May of 2007.

There have been many reasons identified for the decline in western snowy plovers numbers and nest sites (USFWS 2007). Threats to the species are many, but most fall under the broad categories of predation, human disturbance, and habitat loss. Colwell et al. (2006) identified predation as the most imminent threat to snowy plovers locally, as predator nest exclosures have become decreasingly effective at enhancing reproductive success. Exclosures were removed from Clam Beach and Little River State Beach in 2006 after predators learned to watch for nesting adults leaving exclosures. Human disturbance continues to be a close second to predation at all sites where plovers nest

In RNSP, factors that could affect the species directly include the presence of vehicles on the wave slope, dogs running off leash, visitor recreation activities (e.g., kite flying, building driftwood structures, team games such as Frisbee, volleyball, etc.), and predators. Although the abundance of predators using beach habitat in the park is unknown, track and incidental wildlife observations suggest a fairly diverse group of predators inhabit the beach. Eleven of the 22 native vertebrates identified as predators of snowy plover eggs, chicks, or adults are known to occur in beach habitats in RNSP. To a lesser extent, illegal driving (e.g., by unauthorized persons or above the permitted area of the wave slope) and firewood cutting/gathering may also impact snowy plovers directly, or indirectly, by reducing habitat quality in some areas.

B. Habitat Status

RNSP has approximately 1,029 ac (412 ha) of beach habitat that are currently considered potentially suitable for snowy plovers. The recovery plan identified Gold Bluffs Beach as providing potential wintering and migration habitat important to the recovery of the species (USFWS 2007). No other RNSP beaches were identified in the recovery plan as providing habitat of any sort that should be managed for the population's recovery, however, the recovery plan does state that as new breeding areas are discovered the current list of important breeding habitats should be expanded or refined as appropriate.

The quality of beach habitat in RNSP has been reduced in many locations due to extensive invasion by European beachgrass (*Ammophila arenoides*). The northern half of Gold Bluffs Beach (including the area where plovers occurred in 2004) likely constitutes the best plover habitat, where it is wide and open and exotic beachgrass has not stabilized the dunes to the same degree it has elsewhere. Restoration activities to remove European beachgrass have occurred at the northern portion of Gold Bluffs. Freshwater Spit and the adjacent beach to the north also appear to provide good quality habitat. In this area, the dune mat community has been restored through exotic plant management efforts, including the removal of European beachgrass. However, this beach receives a high amount of public use along its entire stretch, which may deter plover use. Together, Gold Bluffs Beach and Freshwater Spit/Beach account for approximately 669 ac, or 65% of the available beach habitat in RNSP.

2. Beach Layia (*Layia carnosa*) Endangered

A. Species Account

The northern-most known population of beach layia was discovered on Freshwater Spit in RNSP in July of 1999. After the Freshwater population was discovered additional surveys for beach layia were conducted in 2000 in all potentially suitable habitat in RNSP. No additional populations to date have been detected in RNSP. The population at Freshwater Spit appears to be stable, or slightly increasing, and currently consists of four or five main plant clusters with individual plants scattered in between.

B. Habitat Status

RNSP currently has an estimated 669 ac (267 ha) of beach that remain year round, are not likely to be inundated during high tides, and have a dune complex that provides potentially suitable beach layia habitat. Freshwater Spit and the beach north to the Redwood Creek estuary constitute approximately 79 ac (31 ha) of this habitat. The remaining potentially suitable habitat occurs north of Major Creek to Carruther's Cove along Gold Bluffs Beach, with the best potential habitat at the north end of Gold Bluffs Beach from Ossagon to Carruther's Cove. However, the widespread occurrence of European beachgrass on this beach has reduced the quality of the habitat for beach layia. In places where the exotic beachgrass was removed from Freshwater Spit, beach layia populations have responded favorably by occupying restored areas of the beach (L. Arguello pers. comm.). Currently there is approximately 0.5 acres of beach habitat, all at

Freshwater Spit, occupied by beach layia. The area of occurrence has remained constant between 2007-2009.

3. Tidewater Goby (*Eucyclogobius newberryi*), Endangered

A. Species Account

Locally, tidewater gobies are known to occur in Humboldt Lagoons State Park, at Stone Lagoon just south of the RNSP boundary. The status of the species throughout all of RNSP is unknown, but based on the available information it appears unlikely that this species occurs in the parks. Presence/absence sampling was conducted annually in the Redwood Creek estuary from 1996 through 2002, and in 1998 in Espa Lagoon, near Gold Bluffs Beach, with no detections (RNSP 1998, Anderson 2002). Pilot surveys using a draft protocol were conducted in 2004 in two creeks that could qualify as potentially suitable tidewater goby habitat, Johnson Creek/Lagoon (Carruther's Cove) and Ossagon Creek. No gobies were detected during these surveys (G. Goldsmith pers. comm.). A number of small creeks flow from the adjacent forest onto the beach, but become subsurface during the dry summer months.

There are historic records of gobies at Freshwater Lagoon from the early 1950s prior to highway construction over the spit (Swift et al. 1989), and five gobies were collected from the Redwood Creek estuary in the early 1980's (T. Hofstra pers. comm.). The Redwood Creek specimens are the last known captures of this species in the park. It is unlikely that the species will return to the Redwood Creek estuary without reintroduction and restoration of the estuary to its historical configuration (RNSP 1998). Likewise, it is unlikely that Freshwater Lagoon will be recolonized unless tidal flow is restored and/or exotic species are removed from the lagoon.

B. Habitat Status

Marshy coastal creeks, especially if associated with a lagoon that is on occasion brackish, are expected to provide good quality habitat for this species (C. Chamberlain pers. comm.). Some of the creeks in RNSP matching this description along Gold Bluffs Beach have not had ocean contact since the 1970s due to sand accretion that has occurred there (P. Rovai pers. comm.). Some creeks that do contact the ocean during winter months include Boat and Home creeks near Fern Canyon, and Johnson Creek/Carruther's Cove at the north end of Gold Bluffs Beach. The Klamath River estuary also may provide suitable habitat for this species.

VI. IMPACTS TO THE THREATENED AND ENDANGERED SPECIES

A. Direct Effects

1. Snowy Plover

RNSP's snowy plover management strategy allows vehicles to access the wave slope during the day when snowy plover adults, nests, and/or chicks are present and during the

night when snowy plover adults and nests are present. Vehicle beach access could directly affect the western snowy plover due to the potential for individuals to be injured or killed by a vehicle when on the wave slope. However, with the exception of the beaches north and south of Redwood Creek where vehicle access for up to 17 permits will be perpetual and at Gold Bluff Beach where vehicle access for traditional use will be perpetual; vehicle beach access within RNSP will decrease over time as vehicle access for commercial and sport fishing is being phased out on Crescent Beach and Gold Bluffs Beach. At Crescent Beach and Gold Bluffs Beach, vehicle use associated with fishing will continue by a renewable, nontransferable annual permit only. No new permits will be issued, and any permit not renewed in a given year will be terminated.

Requiring a speed limit of 10 mph and 5 mph when adults and chicks respectively, are present should help fishers avoid collisions with plovers. Snowy plover adults and chicks are known to use tire tracks for roosting; this behavior increases their chances of being in the path of a vehicle given the tendency for drivers to use existing tracks. Snowy plover chicks may have difficulty climbing quickly out of tire ruts and may resort to crouching in the tracks as a survival instinct (USFWS 2007). The cryptic coloration and habit of crouching and freezing as a defense mechanism, makes chicks especially vulnerable to death or injury from vehicles driven on the beach. The required speed limit of 10 mph (when adults are present) and 5 mph (when chicks are present), should reduce the threat of collision between vehicles and plovers by allowing plovers ample time to move as a vehicle approaches. Night-time vehicle beach access closures (when chicks are present) will eliminate the potential for collision with plovers at night. Broods hatching from an undetected nest would be especially vulnerable to being run over (as the speed limit decrease would not be triggered) during the period between hatching and detection by staff. The level of risk would be dependent on the time between hatching and timing of detection. Formal training for fishers on snowy plover biology and identification should help minimize the potential for collision with plovers.

The condition of the permits requiring vehicles to remain on the wave slope at all times should ensure that vehicles are being driven in a location away from any potential nest sites. Marking a nest protection area with signs and symbolic fencing and restricting vehicle access to the wave slope may minimize destruction of eggs, however, foraging plovers are likely to be present on the wave slope during the nesting period, both day and night. If a nest goes undetected by surveyors, and is located just above the wave slope, it may be especially vulnerable to destruction by a vehicle.

RNSP vehicle track monitoring data indicate that vehicular access results in vehicles being driven in areas of the beach not allowed under the conditions of the permit (see Appendix E, Vehicle Use Summary). In 2008, out of 79 surveys only 2 surveys (3 %) resulted in observations of vehicle tracks outside the permitted area. Compared to 2009 where out of 72 surveys, 9 surveys (13%) resulted in observations of vehicle tracks outside the permitted area. During very high tides we have observed that some vehicles are driven high up on the beach and in vegetated areas, possibly to avoid rough surf, despite the stipulations to keep out of these areas under any circumstances. RNSP law enforcement staff are aware of the problems occurring on the beach in association with

vehicle access, and make every attempt to enforce regulations. In reality, staffing levels do not allow for consistent, regular ranger patrols on the beach especially during the busy visitor use season, which coincides to some degree with peak fishing seasons. During 2008-2009, law enforcement patrols ranged from almost daily at Freshwater Beach, to weekly at Crescent Beach and monthly at Gold Bluffs Beach.

Management recommendations by Colwell et al. (2004) summarized succinctly their view of vehicles present in snowy plover habitat:

“Vehicles are incompatible with plovers because they decrease reproductive success (e.g., run over eggs or chicks) and disturb normal behaviors (e.g., incubation, feeding and roosting). As such, we oppose vehicles in plover habitats. Over the past four years, significant improvement has occurred in Recovery Unit 2 [RNSP’s recovery unit] regarding vehicle use in plover habitats. First, we believe that the nighttime vehicle closure instigated at Clam Beach in July 2003 was extremely positive for management of the plover. Nighttime vehicle play, each year a possible source of chick mortality, was obviously not a factor in 2004.”

In Colwell et al. (2008) authors’ concluded that increased vehicle access resulted in greater levels of non-compliant vehicles and that non-compliant vehicles result in lower productivity, based on eight years of monitoring at one beach in Humboldt County.

2. Beach Layia

One population of beach layia is known in the parks, on Freshwater Spit. Extensive surveys were conducted in 2000 on RNSP beaches north of Freshwater Spit, no other beach layia populations were found. Although there have been observations of vehicle tracks in the vegetation at Freshwater Spit, most of the unauthorized vehicle activity has been around beach entry points. The vehicle beach access point closest to the beach layia population is approximately 0.25 mi away. Under the conditions of the commercial and sport fishing permits no ATVs or access into the area occupied by beach layia, even if it falls within a high tide zone, are allowed. Based on the nature of some of the tracks (ATV as opposed to truck tracks) it is likely that some proportion of beach driving violations have been the result of the general public illegally accessing the beach. However, the one citation issued in the Freshwater area related to unauthorized beach access was to a commercial fisherperson driving above the wave slope and collecting driftwood at the very north end of the beach.

At this time, impacts to the beach layia from vehicle beach access appear to be negligible. This is because the level of vehicle activity above the wave slope in vegetated areas is relatively low compared to the overall amount of use this beach receives, the location of the beach layia population on Freshwater Spit is well removed from the vehicle entry points, and tracks have not been noted in near proximity to the beach layia. If future monitoring indicates that vehicle beach access permittees are driving in and

around the area of beach occupied by beach layia, consultation would be reinitiated immediately.

3. Tidewater Goby

The tidewater goby appears to be absent from the two places where sampling has occurred within RNSP, the Redwood Creek estuary and Espa Lagoon near Gold Bluffs Beach, and is probably absent in the other potentially suitable habitats on Gold Bluffs Beach, based on the limited surveys that have been conducted (Chamberlain 2006). Suitable habitat may occur elsewhere in the parks where there are marshy coastal streams with potential to form brackish lagoons. However, it appears unlikely that gobies, if present, would use the outflow portion of these streams where they cross the sandy beach (D. Anderson pers. comm.). Indications are that tidewater gobies locally occur mainly in larger bodies of water such as Stone Lagoon. Therefore, vehicle beach access will not affect the tidewater goby or potentially suitable habitat.

B. Indirect Effects

The presence of vehicles on the beach, at a minimum, may cause disturbance to foraging snowy plover adults and chicks (USFWS 2007). At Gold Bluffs Beach, we have observed snowy plovers using vehicle tracks as perching locations, probably due to the warmth and protection from wind track depressions provide. Plovers that are forced to move from a sheltered location, or to alter their behavior frequently, could be at risk for increased predation, or expend energy that would otherwise be spent on foraging or some other life-enhancing activity.

Wood gathering for firewood has the potential to degrade snowy plover habitat. However, the amount of wood gathering allowed is limited to personal use only and fires are required to be in established fire rings or on the wave slope (wood gathering and waveslope fires are not allowed at Gold Bluffs Beach). Fires on the wave slope have the potential to disrupt plover foraging behavior.

C. Cumulative Effects

Cumulative effects are defined as all those state, tribal, local, and private actions that are reasonably certain to occur in the future that have the potential to impact listed species in the parks. Unregulated vehicle access on the Klamath spit may cause impacts to snowy plovers using RNSP beaches. Although the Klamath spit is within the RNSP boundary, the access to the beaches that make up the spit is privately owned. Neither the NPS nor CSP regulates use of this property including vehicle access to it. Human disturbance on the spit is probably constant; many people fish and recreate on the spit, people may drive vehicles anywhere, anytime. It is unknown whether snowy plovers historically used the Klamath beaches for nesting or wintering habitat. However, given that potentially suitable habitat occurs both north and south of the Klamath, and that plovers have not been observed here, it is unlikely that unregulated activity on the Klamath spit constitutes an adverse effect on this species..

Management relative to vehicle beach access at county and State Parks outside of the partnership, e.g., Clam Beach and Little River State Beach, could affect snowy plover populations in the RNSP by reducing reproductive success and recovery of the species. Discontinuing the use of nest exclosures at Clam Beach may result in these breeding plovers dispersing to other nesting locations within the recovery unit. Snowy plovers are known to move up and down the west coast during a breeding season and among breeding seasons. Snowy plovers fledged from RNSP beaches could move to other Humboldt County beaches where they are increasingly vulnerable to predation or human disturbance. Indeed, the pair that attempted to nest on Gold Bluffs Beach in 2005 was subsequently detected at Clam Beach a day or two after their nest failed at Gold Bluffs.

VII. DETERMINATION

Based on the nature and timing of the proposed actions, it is my determination that vehicle beach access in RNSP will have the following effects on the threatened and endangered species considered in this document:

Vehicle beach access for the purposes of commercial fishing, sport fishing, and Yurok Native American traditional uses, may affect, and is likely to adversely affect the western snowy plover.

Vehicle beach access for the purposes of commercial fishing, sport fishing, and Yurok Native American traditional uses may affect, but is not likely to adversely affect the beach layia.

Vehicle beach access will not affect the tidewater goby

VIII. MANAGEMENT RECOMMENDATIONS

There are no management recommendations.

IX. CONTRIBUTORS

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- Chamberlain, Charlie. Senior Fishery Biologist. Yurok Tribe, Hoopa, CA - 17
- Hofstra, Terry. Resources Management and Science Division Chief. Redwood National and State Parks, Orick CA. - 17
- LeValley, Ron. Mad River Biologists, McKinleyville, CA - 26
- Rovai, Phil. Park Ranger. Prairie Creek Redwoods State Park, Orick, CA - 17
- Wheeler, Jim. Park Guide. Redwood National and State Parks, Orick, CA – 19

Appendix A. Synopsis of Prior RNSP Vehicle Beach Access Consultation.

Fall 2000. Informal consultation on vehicle beach access began between the Parks and the Service.

May 23, 2001. RNSP requested informal consultation on vehicle beach access.

June 12, 2001. The Service issued a letter concurring with the Parks' determination that the action was not likely to adversely affect snowy plovers. This consultation was valid through March 2002.

May 1, 2002. RNSP requested informal consultation on vehicle beach access for the period 2002-2006. The use of all-terrain vehicles by Parks' staff was included in the proposed action.

May 21, 2002. The Service issued a letter of concurrence with the Parks' determination that the proposed vehicle beach access from 2002-2006 was not likely to adversely affect the snowy plover. The concurrence letter stated that if plovers were detected on park beaches, then consultation would be reinitiated.

January 13, 2004. Two snowy plovers were detected on Gold Bluffs Beach.

February 17, 2004. RNSP and Service staff discussed reinitiation and agreed to wait and see if plovers remained until the breeding season.

February 2004. Reinitiation of consultation began. Parks and Service staff began development of a plover management strategy.

April 7, 2004. RNSP and Service staff met to review the draft snowy plover management strategy. It was stressed that park managers needed to be clear on what they were committing to do to protect and manage plovers when present.

May 24, 2004. An adult plover and two chicks were observed on Gold Bluffs Beach.

May 26, 2004. Parks managers and staff met with Service staff to discuss plover protections. The California State Parks (CSP) District Superintendent decided the only way to maximize protection for the chicks was to temporarily restrict vehicle access through June 21, 2004.

May 27, 2004. State Parks temporarily closed Gold Bluffs Beach to vehicles, dogs, and kite flying for approximately 30 days until the chicks fledged.

June 8, 2004. RNSP, Service, and CSP North Coast Redwoods District staff met to discuss finalizing the plover management strategy and alternatives to allow vehicles access to fishing grounds north of the brood area. It was determined that regulatory requirements precluded any type of short term implementation to allow vehicles access north of the brood area and the brood location could change. Other issues discussed included potential liabilities of agencies requiring private vehicles to drive in the surf to help avoid impacts to plovers, vehicle access to the beach at night and two instances where adult plovers were killed by vehicles at night, and increased disturbance resulting in a reduction of available habitat.

June 30 2004. Parks and Service staff met to discuss the latest draft of the plover management strategy. Specifics were discussed relative to wintering areas, nest site and brood protection areas, and amending language on the access permit to include a "be forewarned" clause that access could be limited by plover presence. The guidelines were reviewed page by page and comments from the group and others were incorporated in a subsequent draft. At this meeting it also was agreed that park

managers would implement the draft guidelines as currently written if additional snowy plovers were detected on park beaches prior to guidelines being finalized.

January 21, 2005. Parks' and Service managers and staff met to discuss plover management in light of CSP's concern about restricting vehicle access at any time when plovers were present. Discussion focused on what restrictions would be necessary to protect nesting plovers and broods.

January 21, 2005. Parks' and Service managers met with commercial beach fishers to discuss issues and options.

January 25, 2005. Parks and Service staff and managers met with commercial fishers at Gold Bluffs Beach to discuss an alternate vehicle access point.

February 24, 2005. Parks and Service staff and managers discussed a decisions made during an internal Parks' conference call the previous day. These decisions included prohibiting vehicles access at night and requiring a certified monitor on-site prior to vehicle access during the day when plover broods were present.

March 17, 2005. A plover management strategy for RNSP was approved and signed by the Parks Superintendents. The strategy established temporary brood protection zones that included the waveslope and closed the entire zone to night driving, dogs, horses, and kite flying. Vehicles would be allowed to pass through the zone during the day when a monitor was on-site.

April 1, 2005. Parks and Service managers and staff and CSP's general counsel held a conference call to discuss access restrictions included in the approved plover management strategy and the commercial fishers' complaints and possible lawsuit.

April 5, 2005. Parks and Service managers, CSP's general counsel, and commercial fishers and their attorney held a conference call to discuss fishers concerns with the night driving restrictions and requirement for a monitor.

April 8, 2005. Parks and Service managers and CSP's general counsel held a conference call to discuss the plover management strategy.

April 13, 2005. Parks and Service managers and CSP's general counsel held a conference call. A decision was made to modify the March 17, 2005 plover management strategy to allow fishers' vehicle access during the brood period and to require fishers to obtain training regarding plover biology.

May 4, 2005. A conference call took place among Parks and Service staff to discuss implementation of the RNSP snowy plover management strategy and the handling of public relations issues.

May 25, 2005. RNSP received a list of endangered, threatened, and candidate species from the Service.

June 3, 2005. The plover management strategy was amended with an errata signed by the Parks Superintendents.

July 14, 2005. RNSP requested formal consultation on vehicle beach access.

December 6, 2005. The Parks asked to extend the timeframe of the consultation for one year to March 2008.

April 12, 2006. The Service issued a Biological Opinion on April 12, 2006. The biological opinion was valid through March 31, 2008.

January 29, 2007. The Service issued a Biological Opinion of the Parks' Trail and Backcountry Management Plan. The proposed action included recreational use of all of the Parks' beaches. This opinion authorized the Parks' incidental take of

western snowy plovers due to harassment from recreational activities of up to six breeding adults and their broods and 15 wintering adults on the Parks' beaches annually for 10 years, 2007 through 2017.

August 21, 2007. Vehicle beach access was discussed at an interagency consultation team meeting. Primary issues were the new Federal legislation (the Northern California Coastal Wild Heritage Wilderness Act.P.L. 109-362), compliance with the waveslope driving restriction, and submission of fishers beach access logs.

August 28, 2007. Parks and Service staff and managers held a meeting to discuss the annual vehicle track report, compliance with waveslope driving restrictions, and submission of fishers beach access logs.

March 4, 2008. The Parks requested formal consultation on vehicle beach access.

April 7, 2008. The Parks sent an E-mail to the Service changing the fourth sentence in the second paragraph of Section IV.C.6 of their biological assessment to the following: If vehicle tracks outside of the permitted areas are documented on > 25 percent of the plover surveys at any of the identified beach survey stretches (see Section VI, tables 1-3) then a letter will be sent to all permit holders that permit conditions are being violated, and a temporary suspension of beach access may occur if observations of vehicle tracks outside of permitted areas continues.

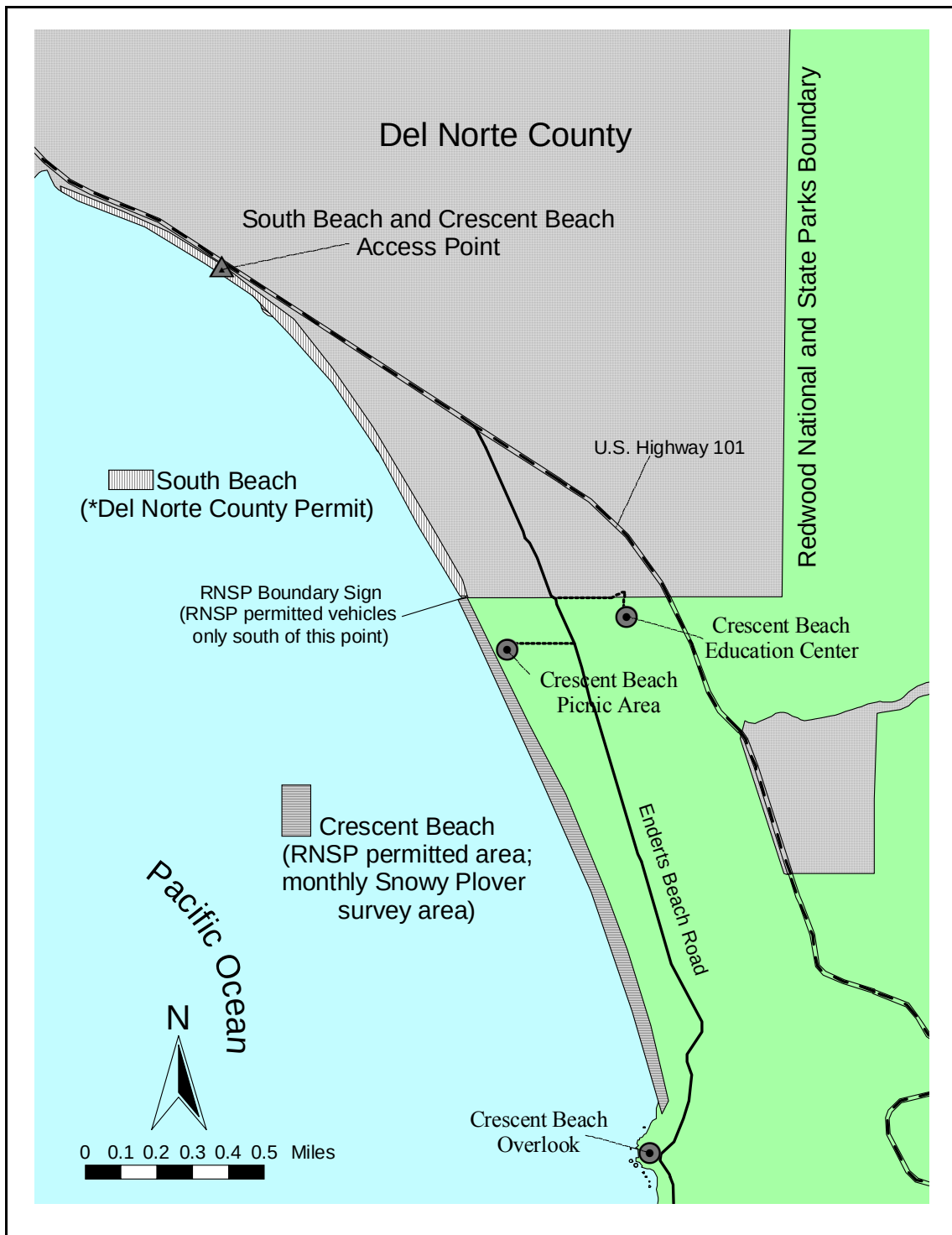
April 15, 2008 Randy Brown of the Service and Steve Cheney of Redwood National Park discussed including a term and condition regarding night driving when chicks are present.

April 29, 2008. The Service issued a Biological Opinion on Vehicle Beach Access valid through March 31, 2010

November 10, 2009. Parks and Service staff held a meeting to discuss the upcoming formal request and the potential to extend the period for which the BO is valid.

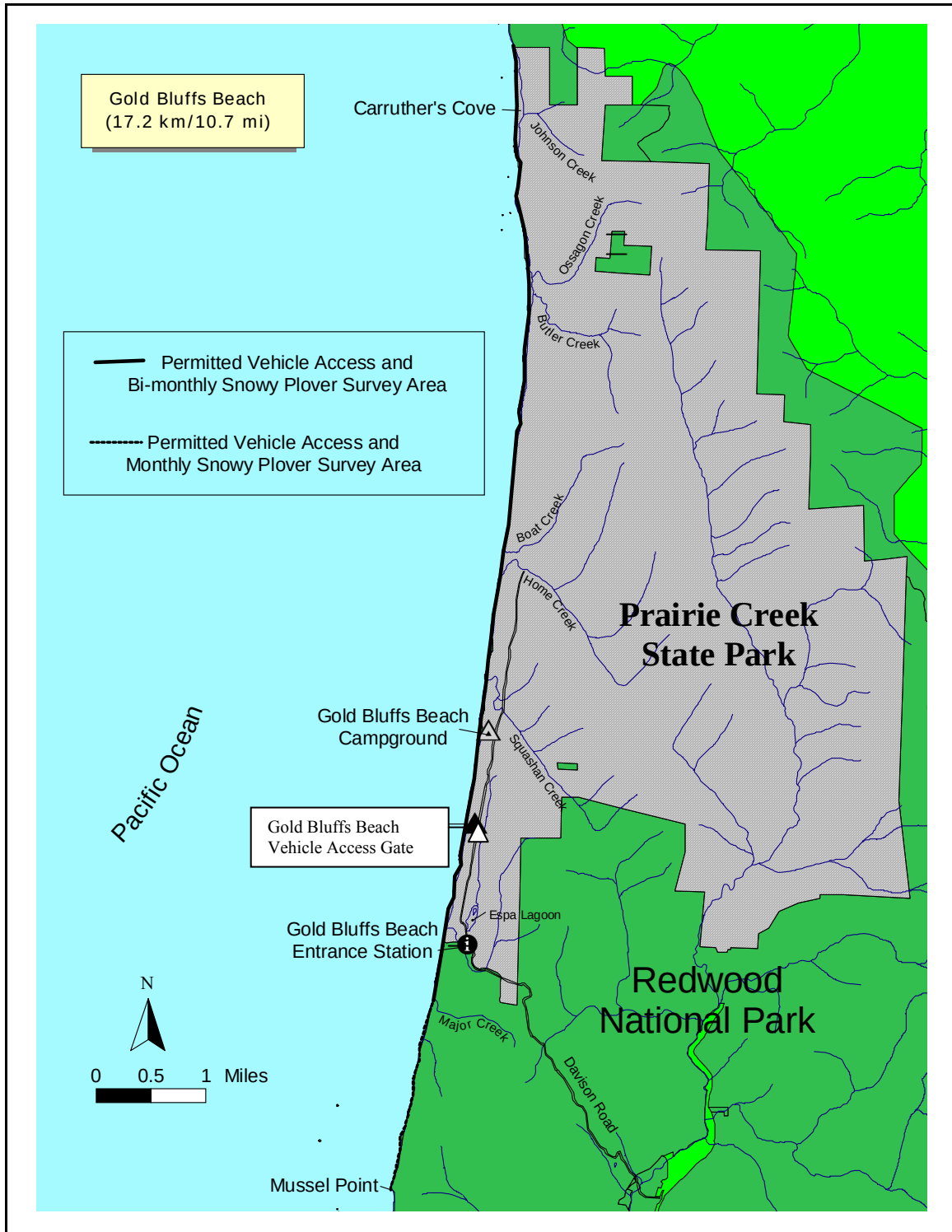
Appendix B. Designated beaches within RNSP accessible by vehicles.

Map 1 - Crescent Beach, Redwood National Park.



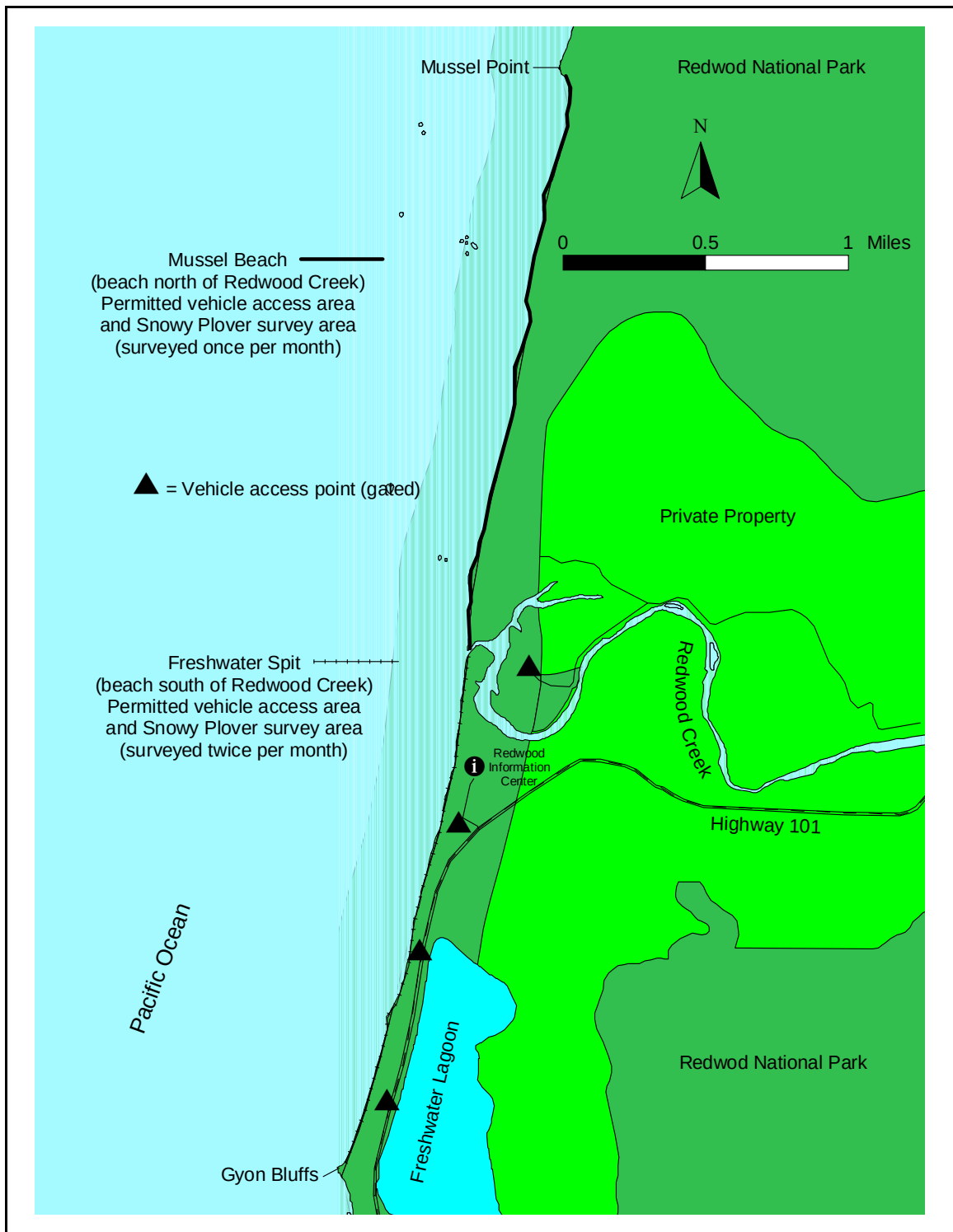
Appendix B. (cont.)

Map 2 - Gold Bluffs Beach, Prairie Creek Redwoods State Park/Redwood National Park.



Appendix B. (cont.)

Map 3 - Freshwater Spit and Mussel Beach (beaches north and south of Redwood Creek),
Redwood National Park.



Appendix C. Vehicle Beach Access Special Use Permits

- C1. Commercial Fishing, Redwood Creek Beaches (includes Public Law 109-362 section 10 permit.**
- C2. Commercial Fishing, Crescent Beach**
- C3. Commercial Fishing, Gold Bluffs Beach**
- C4. Sport Fishing for Mobility Impaired Persons, Redwood Creek Beaches**
- C5. Sport Fishing for Mobility Impaired Persons, Crescent Beach**
- C6. Yurok Traditional Use, Gold Bluffs Bea**

UNITED STATES DEPARTMENT OF THE INTERIOR
National Park Service

Special Use Permit

In accordance with Public Law 109-362 dated October 17, 2006, this permit is issued to _____ . This permit authorizes vehicle access onto the wave slope* area of the portion of beach north and south of Redwood Creek in Redwood National and State Parks for the **sole purpose of commercial fishing**, subject to the conditions listed below.

***“Wave slope”** is defined as the area that was wet by the wave action of the previous high tide, and does not include any vegetated areas.

This permit is valid from April 1, 2010 through March 31, 2011.

CONDITIONS OF THIS PERMIT:

1. Licensee must show proof of a valid California Department of Fish and Game Commercial Fishing License, driver's license, vehicle registration and insurance.
2. Permit and key are valid only for the person and vehicle(s) identified on this permit and are not transferable. The permit must be visible at all times while in the park or on the beach.
3. Licensee may utilize only a street legal motor vehicle. Vehicle must be designed to travel off road with four-wheel drive; capable of negotiating beach sand. If the vehicle becomes stuck or disabled, licensee is responsible for removing vehicle from the wave slope. No ATV's, dune buggies, or motorcycles are authorized.
4. Maximum speed limit on the beach is 20 mph. From January 1st – February 29th speed limits will be reduced to 10 mph when adult plovers are present. During the Western Snowy Plover nesting season (March 1st – September 30th) the maximum speed limit in the designated temporary Nest Protection Areas and Brood Protection Zones is 5 mph. This information will be provided to the Licensee by park staff.
5. Licensee shall attend a Plover Biology Training Session that covers the following information including:
 - a. Biology, ecology and behavior of the Western Snowy Plovers (WSP)
 - b. Identification of WSP and other common beach shorebirds
 - c. Threats to the WSP and their habitats
 - d. The current and range wide status of the WSP
 - e. Regulatory status of the WSP including salvage
 - f. Reporting sightings of the WSP
 - g. Night time driving and identification of the WSP

The training shall be given by a person with a current 10(a)(1)(A) permit issued by the US Fish & Wildlife Service. A certificate of completion must be presented to a Redwood National and State Parks Representative on or before the time of issuance of this permit. Licensee is responsible for locating a class and for the cost of the class.

6. Licensee shall carry this permit at all times when driving on the beach and shall present it when requested by a peace officer.

7. Licensee shall be physically present and engaging in commercial fishing while the permittee's vehicle is on the beach. Sport fishing is not allowed. Licensee may be accompanied by one other person who stays with the vehicle and is bound by all conditions of this permit.
8. Licensee vehicle may not be left unattended on the beach, except in an emergency. In case of an emergency, permittee will notify a park ranger immediately of the circumstances and provide an estimate of when the vehicle will be removed from the beach.
9. Cutting and/or collecting wood is prohibited.
10. Key duplication is not permitted and is a misdemeanor per California Penal Code section 469. Permittee shall surrender his or her keys to the park upon termination of this right of entry. A replacement key will cost \$40.00 to cover processing costs.
11. Licensee agrees to obey all State and Federal laws and regulations in the park. Violation of any State and Federal law or regulation, or the conditions of this right of entry in the park, may result in administrative revocation of the right of entry and forfeiture of future permits.
12. This authorization may be immediately and unilaterally restricted, modified, canceled or revoked by the Superintendent for the following reasons:
 - a. Public health, safety and welfare as determined by the Superintendent
 - b. Consultation with other resource agencies which indicates that threatened or endangered species are being increasingly adversely affected by continued use of the permit.
 - c. Failure to follow the conditions of the permit.
13. Action by the Superintendent to revoke or cancel this permit which results in a finding by the Superintendent that the applicant has violated the law, shall constitute abandonment of the permit and applicant shall not be allowed to apply for another permit.
14. Licensee shall keep a log of all beach trips. The logs will be submitted on a quarterly basis (January 1st, April 1st, July 1st, and October 1st). The log will include the licensee's name, location, time arrived on beach, time left the beach and catch data. Catch data will include if fish are caught or not, and type of fish caught. If a licensee does not fish during a quarter, a log should be sent in stating, "Did Not Fish". The logs will be sent to RNSP Beach Access Permit Administrator, P.O. Box 7 Orick, CA 95555. Failure to submit beach trip logs may result in the forfeiture of a future permit.

Performance Requirements:

In order to help achieve the intent and purposes of Public Law 109-362, the following additional requirements must be met in order to remain eligible for non-competitive annual renewal of this permit.

- Permittee must have held a valid Section 10 permit for the previous season.
- Permittee must demonstrate that at least 10 hours of fishing effort was expended on at least three different dates during the prior fishing season. Beach logs will be used for verification.
- Permittee must provide documentation of commercial sale of local surf fish for at least one of the last two fishing seasons.

NAME _____ DATE _____

COMMERCIAL FISHING LICENSE ID. # _____

ANNUAL FISHING PASS # _____ KEY # _____

VEH. MAKE _____ MODEL _____ COLOR _____

VEHICLE LICENSE # _____

DRIVERS LICENSE # AND EXPIRATION DATE _____

INSURANCE COMPANY AND POLICY

POLICY EXPIRATION DATE _____

THE ABOVE NAMED INDIVIDUAL AGREES TO ABIDE BY THE CONDITIONS OF THIS PERMIT.

PERMITTEE NAME _____

PERMITTEE SIGNATURE _____

PERMITTEE ADDRESS _____

PHONE NUMBER _____

PERMIT ISSUED BY _____

STEVE CHANEY
REDWOOD NATIONAL PARK SUPERINTENDENT

UNITED STATES DEPARTMENT OF THE INTERIOR
National Park Service

Special Use Permit

Name of Use : Vehicle Beach Access

Date Permit Reviewed Jan, 2010

Long Term ☐

Expires 2011 March 31

Permit # PWR-REDW-5600-

(Region Park Type No. #)

Short Term ☒

Redwood National and State Parks

Name of Area

Name or Permittee	Address	Phone
is hereby authorized during the period from (Time <u>0000</u> day <u>1</u> Month <u>April, 2010</u>), through (Time <u>2400</u> day <u>31</u> Month <u>March, 2011</u>), to use the following described land or facilities in the above named area:		

Crescent Beach Wave Slope (See wave slope definition in Condition #8)

For the purpose(s) of: **Vehicle Beach Access for Commercial Fishing**

Authorizing legislation or other authority (RE - DO-53): 36 Code of Federal Regulations sections 1.5 & 4.10(a)

NEPA Compliance: CATEGORICALLY EXCLUDED ☐ EA/FONSI ☐ EIS ☐ OTHER APPROVED PLANS ☒

PERFORMANCE BOND: Required ☐ Not Required ☒ Amount \$

LIABILITY INSURANCE: Required ☐ Not Required ☒ Amount \$

ISSUANCE of this permit is subject to the conditions on the reverse hereof and appended pages and when appropriate to the payment to the U.S. Dept. of the Interior, National Park Service of the sum of \$ WAIVED
The undersigned hereby accepts this permit subject to the terms, covenants, obligations, and reservations, expressed or implied herein.

PERMITTEE _____
Signature Date

Authorizing Official _____, Superintendent
Signature Title Date

Additional Authorizing Official _____
(if Required) Signature Title Date

1. The permittee shall exercise this privilege subject to the supervision of the Superintendent, and shall comply with all applicable laws and regulations of the area.
2. Damages - The permittee shall pay the United States for any damage resulting from this use which would not reasonably be inherent in the use which the permittee is authorized to make of the land described in this permit.
3. Benefit - No Member of Congress shall be admitted to any share or part of this permit or to any benefit that may arise there from; but this provision shall not be construed to extend to this grant if made with a corporation for its general benefit.
4. Assignment - This permit may not be transferred or assigned.
5. Revocation - This permit may be terminated upon breach of any of the conditions herein or at the discretion of the Superintendent.
6. The permittee is prohibited from giving false information; to do so will be considered a breach of conditions and be grounds for revocation [Re: 36 CFR 2.32(a)(4)].
7. Permittee may utilize only a street legal motor vehicle. Vehicle must be designed to travel off road with four-wheel drive and be capable of negotiating beach sand. If the vehicle becomes stuck or disabled, permittee is responsible for removing vehicle from wave slope. No ATV'S, dune buggies, or motorcycles are authorized.
8. Maximum speed limit on the beach is 20 mph. Should Western Snowy Plovers nest on Crescent Beach, permittee will be required to attend Plover Biology Training and to comply with speed limit reductions.

"Wave slope" is defined as the area that was wet by the wave action of the previous high tide, and does not include the upper beach berm or any vegetated areas. (If a high tide prevents driving on the beach without driving onto vegetated area, then the driver must wait for a lower tide before proceeding.)
9. Permittee agrees to obey all state and federal laws and regulations. Violation of any state or federal law or regulation, or a condition of this permit, may result in revocation of permit.
10. Permittee shall carry this permit at all times when driving on the Crescent Beach wave slope and shall present it on demand to any park ranger or peace officer.
11. Sport fishing is not allowed. Licensee may be accompanied by one other person who stays with the vehicle and is bound by all conditions of this permit. Permittee must be present and fishing while the permittee's vehicle is on the beach.
12. Permittee shall present his or her valid California Department of Fish and Game Commercial Fishing License, driver's license, vehicle registration and insurance at the time of application and have in possession when exercising the privileges granted by this permit.
13. Permittee's vehicle may not be left unattended on the beach, except in an emergency. In case of an emergency, permittee will notify a park ranger immediately of the circumstances and provide an estimate of when the vehicle will be removed from the beach.
14. Driftwood may not be gathered within the park except for use as firewood in an established fire ring within the park or on the beach below the wave slope, outside of burnable vegetation.

15. Permittee may only access Crescent Beach from the wave slope of South Beach which requires a Del Norte County Permit.
16. This authorization may be immediately and unilaterally restricted, modified, cancelled or revoked by the Superintendent for the following reasons including:
- a. Public health, safety and welfare as determined by the Superintendent.
 - b. Consultation with other resource agencies which indicates that threatened or endangered species are being increasingly adversely affected by continued use of the permit.
 - c. Failure to follow the conditions of the permit.
17. Action by the Superintendent to revoke or cancel this permit which results in a finding by the Superintendent that the applicant has violated the law, shall constitute abandonment of the permit and applicant shall not be allowed to apply for another permit.
18. Permittee shall keep a log of all beach trips. The logs will be submitted on a quarterly basis (July 1st, October 1st, January 1st, April 1st). The log will include the permittee's name, location, date, time arrived on beach, time left the beach and catch data. Catch data will include if fish are caught or not and type of fish caught. The log forms will be provided to the licensee by park staff. The logs will be sent to the NPS Chief Ranger, 1111 2nd Street, Crescent City, CA 95531. Failure to submit beach trip logs may result in the forfeiture of a permit.

C3. Commercial Fishing, Gold Bluffs Beach



SPECIAL USE PERMIT

In accordance with Department of Parks and Recreation Order # 2-635-14, dated May 1, 2006, and the 2000 General Management Plan/General Plan for Redwood National and State Parks, this permit is issued to _____. This permit authorizes vehicle access onto the wave slope* area of Gold Bluffs Beach, Prairie Creek Redwoods State Park for the **sole purpose of commercial fishing**, subject to the conditions listed below. Only persons holding a valid, non-revoked, permit for the previous season are eligible to have a permit reissued for the following season.

***"Wave slope"** is defined as the area that was wet by the wave action of the previous high tide, and does not include any vegetated areas.

This permit is valid from April 1, 2010 through March 31, 2011.

CONDITIONS OF THIS PERMIT:

1. Licensee must show proof of a valid California Department of Fish and Game Commercial Fishing License, driver's license, vehicle registration and insurance.
2. Permit and key are valid only for the person and vehicle(s) identified on this permit and are not transferable. The permit must be visible at all times while in the park or on the beach.
3. Licensee may utilize only a street legal motor vehicle. Vehicle must be designed to travel off road with four-wheel drive; capable of negotiation beach sand. If the vehicle becomes stuck or disabled, licensee is responsible for removing vehicle from the wave slope. No ATV's, dune buggies, or motorcycles are authorized.
4. Maximum speed limit on the beach is 20 mph. From January 1st – February 29th speed limits will be reduced to 10 mph when adult plovers are present. During the Western Snowy Plover nesting season (March 1st – September 30th) the maximum speed limit in the designated temporary Nest Protection Areas and Brood Protection Zones is 5 mph. This information will be provided to the Licensee by park staff.
5. Licensee shall attend a Plover Biology Training Session that covers the following information including:
 - a. Biology, ecology and behavior of the Western Snowy Plovers (WSP)
 - b. Identification of WSP and other common beach shorebirds
 - c. Threats to the WSP and their habitats
 - d. The current and range wide status of the WSP
 - e. Regulatory status of the WSP including salvage
 - f. Reporting sightings of the WSP
 - g. Night time driving and identification of the WSP

The training shall be given by a person with a current 10(a)(1)(A) permit issued by the US Fish & Wildlife Service. A certificate of completion must be presented to a Redwood National and State Parks Representative on or before the time of issuance of this permit. Licensee is responsible for locating a class and for the cost of the class.

6. Licensee shall carry this permit at all times when driving on the beach and shall present it when requested by a peace officer.
7. Licensee shall be physically present and engaging in commercial fishing while the permittee's vehicle is on the beach. Sport fishing is not allowed. Licensee may be accompanied by one other person who stays with the vehicle and is bound by all conditions of this permit.
8. Licensee vehicle may not be left unattended on the beach, except in an emergency. In case of an emergency, permittee will notify a park ranger immediately of the circumstances and provide an estimate of when the vehicle will be removed from the beach.
9. Cutting and/or collecting wood is prohibited.
10. Key duplication is not permitted and is a Misdemeanor per Penal Code section 469. Licensee shall surrender his or her keys to the park upon termination of this right of entry. A replacement key will cost \$40.00 to cover processing costs.
11. Licensee agrees to obey all State and Federal laws and regulations in the park. Violation of any State and Federal law or regulation, or the conditions of this right of entry in the park, may result in administrative revocation of the right of entry and forfeiture of future permits.
12. This authorization may be immediately and unilaterally restricted, modified, canceled or revoked by the Superintendent for the following reasons including:
 - h. Public health, safety and welfare as determined by the Superintendent
 - i. Consultation with other resource agencies which indicates that threatened or endangered species are being increasingly adversely affected by continued use of the permit.
 - j. Failure to follow the conditions of the permit.
13. Action by the Superintendent to revoke or cancel this permit which results in a finding by the Superintendent that the applicant has violated the law, shall constitute abandonment of the permit and applicant shall not be allowed to apply for another permit.
14. Licensee shall keep a log of all beach trips. The logs will be submitted on a quarterly basis (January 1st, April 1st, July 1st, and October 1st). The log will include the licensee's name, location, time arrived on beach, time left the beach and catch data. Catch data will include if fish are caught or not, and type of fish caught. If a licensee does not fish during a quarter, a log should be sent in stating, "Did Not Fish". The logs will be sent to: Beach Access Permit Administrator, P.O. Box 7, Orick, CA 95555. Failure to submit beach trip logs may result in the forfeiture of a future permit.

NAME _____ DATE _____

COMMERCIAL FISHING LICENSE ID. # _____

ANNUAL FISHING PASS # _____ KEY # _____

VEH. MAKE _____ MODEL _____ COLOR _____

VEHICLE LICENSE # _____

DRIVERS LICENSE # AND EXPIRATION DATE _____

INSURANCE COMPANY AND POLICY # _____

POLICY EXPIRATION DATE _____

THE ABOVE NAMED INDIVIDUAL AGREES TO ABIDE BY THE CONDITIONS OF THIS PERMIT.

SIGNATURE _____

PERMITTEE

PERMITTEE NAME _____

PERMITTEE ADDRESS _____

PHONE NUMBER _____

PERMIT ISSUED BY _____

JEFF BOMKE
STATE PARK SECTOR SUPERINTENDENT

1. The permittee shall exercise this privilege subject to the supervision of the Superintendent, and shall comply with all applicable laws and regulations of the area.
2. Damages - The permittee shall pay the United States for any damage resulting from this use which would not reasonably be inherent in the use which the permittee is authorized to make of the land described in this permit.
3. Benefit - No Member of Congress shall be admitted to any share or part of this permit or to any benefit that may arise there from: but this provision shall not be construed to extend to this grant if made with a corporation for its general benefit.
4. Assignment - This permit may not be transferred or assigned.
5. Revocation - This permit may be terminated upon breach of any of the conditions herein or at the discretion of the Superintendent.
6. The permittee is prohibited from giving false information; to do so will be considered a breach of conditions and be grounds for revocation [Re: 36 CFR 2.32(a)(4)].
7. Permittee may utilize only a street legal motor vehicle. Vehicle must be designed to travel off road with four-wheel drive and be capable of negotiating beach sand. If the vehicle becomes stuck or disabled, permittee is responsible for removing vehicle from wave slope. No ATVS, dune buggies, or motorcycles are authorized.
8. Maximum speed limit on the wave slope is 20 mph. If snowy plovers are present, access to drive on the waveslope of the beaches is temporarily suspended. This suspension will be in effect until the brood has fledged.

"Wave slope" is defined as the area that was wet by the wave action of the previous high tide, and does not include the upper beach berm or any vegetated areas. (If a high tide prevents driving on the beach without driving onto vegetated area, then the driver must wait for a lower tide before proceeding.)
9. Permittee agrees to obey all state and federal laws and regulations. Violation of any state or federal law or regulation, or a condition of this permit, may result in revocation of permit
10. Permittee shall carry this permit at all times when driving on the waveslope and shall present it on demand to any park ranger or peace officer.
11. Permittee must be physically present and engaged in fishing while the permittee's vehicle is on the beach.
12. Permittee shall present his or her valid California Sport Fishing License at the time of application and have the license in possession when exercising the privileges granted by this permit.
13. Permittee's vehicle may not be left unattended on the beach, except in an emergency. In case of an emergency, permittee will notify a park ranger immediately of the circumstances and provide an estimate of when the vehicle will be removed from the beach.
14. Driftwood may not be gathered within the park except for use as firewood in an established fire ring within the park or on the beach below the wave slope, outside of burnable vegetation.
15. Permittee is authorized ONE attendant within the vehicle in order to assist permittee with fishing activities.

UNITED STATES DEPARTMENT OF THE INTERIOR
National Park Service
Special Use Permit

Name of Use : Vehicle Beach Access

Date Permit Reviewed Jan., 2010

Expires 2011 March 31Long Term ☐

Permit # PWR-REDW- 9500- _ _ _

(Region Park Type No. #)

Short Term ☒Redwood National and State Parks

Name of Area

_____ Of _____
 Name or Permittee Address Phone

is hereby authorized during the period from (Time 0000 day 1 Month April, 2010), through (Time 2400 day 31 Month March, 2011), to use the following described land or facilities in the above named area:

Crescent Beach Wave Slope (See wave slope definition in condition #8)

For the purpose(s) of: **Vehicle Beach Access for Sport Fishing (Mobility Impaired)**

Authorizing legislation or other authority (RE - DO-53): 36 Code of Federal Regulations sections 1.5 & 4.10(a)

NEPA Compliance: CATEGORICALLY EXCLUDED ☐ EA/FONSI ☐ EIS ☐ OTHER APPROVED PLANS ☒

PERFORMANCE BOND: Required ☐ Not Required ☒ Amount \$

LIABILITY INSURANCE: Required ☐ Not Required ☒ Amount \$

ISSUANCE of this permit is subject to the conditions on the reverse hereof and appended pages and when appropriate to the payment to the U.S. Dept. of the Interior, National Park Service of the sum of \$ WAIVED

The undersigned hereby accepts this permit subject to the terms, covenants, obligations, and reservations, expressed or implied herein.

PERMITTEE _____
 Signature Date

Authorizing Official _____, Superintendent
 Signature Title Date

Additional Authorizing Official _____,
 (if Required) Signature Title Date

CONDITIONS OF THIS PERMIT

1. The permittee shall exercise this privilege subject to the supervision of the Superintendent, and shall comply with all applicable laws and regulations of the area.
 2. Damages - The permittee shall pay the United States for any damage resulting from this use which would not reasonably be inherent in the use which the permittee is authorized to make of the land described in this permit.
 3. Benefit - No Member of Congress shall be admitted to any share or part of this permit or to any benefit that may arise there from: but this provision shall not be construed to extend to this grant if made with a corporation for its general benefit.
 4. Assignment - This permit may not be transferred or assigned.
 5. Revocation - This permit may be terminated upon breach of any of the conditions herein or at the discretion of the Superintendent.
 6. The permittee is prohibited from giving false information; to do so will be considered a breach of conditions and be grounds for revocation [Re: 36 CFR 2.32(a)(4)].
 7. Permittee may utilize only a street legal motor vehicle. Vehicle must be designed to travel off road with four-wheel drive and be capable of negotiating beach sand. If the vehicle becomes stuck or disabled, permittee is responsible for removing vehicle from wave slope. No ATV'S, dune buggies, or motorcycles are authorized.
 8. Maximum speed limit on the wave slope is 20 mph. If snowy plovers are present, access to drive on the waveslope of the beaches is temporarily suspended. This suspension will be in effect until the brood has fledged.

"Wave slope" is defined as the area that was wet by the wave action of the previous high tide, and does not include the upper beach berm or any vegetated areas. (If a high tide prevents driving on the beach without driving onto vegetated area, then the driver must wait for a lower tide before proceeding.)
 9. Permittee agrees to obey all state and federal laws and regulations. Violation of any state or federal law or regulation, or a condition of this permit, may result in revocation of permit.
 10. Permittee shall carry this permit at all times when driving on Crescent Beach and shall present it on demand to any park ranger or peace officer.
 11. Permittee must be physically present and engaged in fishing while the permittee's vehicle is on the beach.
 12. Permittee shall present his or her valid California Sport Fishing License at the time of application and have the license in possession when exercising the privileges granted by this permit.
 13. Permittee's vehicle may not be left unattended on the beach, except in an emergency. In case of an emergency, permittee will notify a park ranger immediately of the circumstances and provide an estimate of when the vehicle will be removed from the beach.
 14. Driftwood may not be gathered within the park except for use as firewood in an established fire ring within the park or on the beach below the wave slope, outside of burnable vegetation.
 15. Permittee is authorized ONE attendant within the vehicle in order to assist permittee with fishing activities.
 16. Permittee may only access Crescent Beach from the wave slope of South Beach which requires a Del Norte County Permit.
- C6. Yurok Traditional Use, Gold Bluffs Beach



SPECIAL USE PERMIT

The following procedures are required to allow Yurok Native Americans vehicle access to Gold Bluffs Beach, Prairie Creek Redwoods State Park for traditional food gathering activities. This permit applies to Yuroks gathering traditional food items for personal use only (Yuroks wishing vehicle access for commercial fishing purposes will be subject to the same procedures and permit fees as others who commercially fish at Gold Bluffs Beach).

****Waveslope**** is defined as the area that was wet by the wave action of the previous high tide, is below the break in slope, and does not include any vegetated areas.

This permit is valid from April 1, 2010 through March 31, 2011.

CONDITIONS OF THIS PERMIT:

1. This permit is for the purpose of food gathering and vehicles with permits are allowed only on the waveslope of Gold Bluffs Beach.
2. Permit and key are valid only for the person and vehicle(s) identified on this permit and are not transferable. The vehicle permit tag must be visible at all times while in the park or on the beach. Changes in vehicles will require the permit holder to acquire a new collection permit.
3. Members gathering under this permit must have a current CA Sport Fishing license in their possession and must obey all Fish & Game laws. Permit holders agree to abide by all applicable State and Federal Rules, Regulations, and Policies while exercising the privileges granted under the permit.
4. Permittee may utilize only a street legal motor vehicle. Vehicle must be designed to travel off road with four-wheel drive; capable of negotiating beach sand. If the vehicle becomes stuck or disabled, permittee is responsible for removing vehicle from the wave slope. No ATV's, dune buggies, or motorcycles are authorized.
5. Day use fees for the Yurok Native American gathering under the permit process will be waived. All other park related activities such as picnicking, camping, hiking, etc. will be subject to the regular fees. Vehicles without permits will not be allowed beach access and will be subject to day use fees.
6. Only those vehicles whose license number is on the permit will be allowed access. If a person obtains a new vehicle, a new permit must be issued.
7. Maximum speed limit on the beach is 20 mph. From January 1st – February 29th speed limits will be reduced to 10 mph when adult plovers are present. During the Western Snowy Plover nesting season (March 1st – September 30th) the maximum speed limit in the designated temporary Nest Protection Areas or Brood Protection Zones is 5 mph. Information will be provided to the permittee by the State Park staff.

8. Permittee shall attend a Plover Biology Training Session that covers the following information including:
 - a. Biology, ecology and behavior of the Western Snowy Plovers (WSP)
 - b. Identification of WSP and other common beach shorebirds
 - c. Threats to the WSP and their habitats
 - d. The current and range wide status of the WSP
 - e. Regulatory status of the WSP including salvage.
 - f. Reporting sightings of the WSP
 - g. Night time driving and identification of the WSPThe training shall be given by a person with a current 10(a)(1)(A) permit issued by the USFWS. A certificate of completion must be presented to the Beach Access Permit Administrator on or before the time of issuance of this permit. Licensee is responsible for locating a class and for the cost of the class.
9. Permittee shall carry this permit at all times when driving on the beach and shall present it when requested by any peace officer.
10. Permittee shall be physically present and engaging in gathering while the permittee's vehicle is on the beach. Sport fishing is not allowed. Licensee may be accompanied by one other person who stays with the vehicle and is bound by all conditions of the permit.
11. Permittee's vehicle may not be left unattended on the beach, except in an emergency. In case of an emergency, permittee will notify a park ranger immediately of the circumstances and provide an estimate of when the vehicle will be removed from the beach.
12. Cutting and/or collecting wood is prohibited.
13. Permittee agrees to obey all State and Federal laws and regulations. Violation of any State or Federal law or regulation, or the conditions of this permit, may result in administrative revocation of permit.
14. Key duplication is not permitted and is a Misdemeanor per Penal Code section 469. Permittee shall surrender his or her keys to the park upon termination of this permit. A replacement key will cost \$40.00 to cover processing costs.
15. This authorization may be immediately and unilaterally restricted, modified, cancelled, or revoked by the Superintendent for the following reasons:
 - a. Public health, safety, and welfare as determined by the Superintendent.
 - b. Consultation with other resource agencies which indicates that threatened or endangered species are being increasingly adversely affected by continued use of the permit.
 - c. Failure to follow the conditions of the permit.
16. Permittee shall keep a log of all beach trips. The logs will be submitted on a quarterly basis (January 1st, April 1st, August 1st and October 1st). The log will include the permittees name, location, date, time arrived on beach, time left the beach and items gathered. The log form will be provided by park staff to the permittee. The logs will either be brought to the Beach Access Permit Administrator South Operations Center, Orick CA, or sent attn: Beach Access Permit Administrator, P.O. Box 7 Orick, CA 95555. Failure to submit beach trip logs may result in the forfeiture of a future permit.
17. Action by the Superintendent to revoke or cancel a permit which results in a finding by the Superintendent that the applicant has violated the law, shall constitute abandonment

of the permit and applicant shall not be allowed to apply for another permit.

NAME _____ DATE _____

YUROK TRIBAL CARD # _____

CA SPORT FISHING LICENSE # _____

NEW KEY # _____ OLD KEY _____

VEH. MAKE _____ MODEL _____ COLOR _____

VEHICLE LICENSE # _____

DRIVERS LICENSE # AND EXPIRATION DATE _____

INSURANCE COMPANY AND POLICY # _____
POLICY EXPIRATION DATE _____

THE ABOVE NAMED INDIVIDUAL AGREES TO ABIDE BY THE CONDITIONS OF THIS PERMIT.

SIGNATURE

PERMITTEE

PERMITTEE NAME

PERMITTEE ADDRESS

PHONE NUMBER

PERMIT ISSUED BY

JEFF BOMKE
Redwood Coast Sector Superintendent

Appendix D. Gold Bluffs and Crescent Beach Fishing Logs

GOLD BLUFFS BEACH LOG

PERMITEE NAME_____

DATE	LOCATION	TIME IN	TIME OUT	CATCH DATA (FISH/TYPE CAUGHT OR NOT)

PLEASE SEND THIS LOG SHEET TO: South Operations Center, attn: Beach Access
Permit Administrator, P.O. Box 7, Orick, CA 95555. Please submit quarterly on July 1st,
October 1st, January 1st, April 1st.

Appendix D. (cont.)

CRESCENT BEACH LOG

PERMITEE NAME _____

DATE	LOCATION	TIME IN	TIME OUT	CATCH DATA (FISH/TYPE CAUGHT OR NOT)

PLEASE SEND THIS LOG SHEET TO: Redwood National and State Parks,
Attn: NPS Chief Ranger, 1111 2nd Street, Crescent City, CA 95531.
Please submit quarterly on July 1st, October 1st, January 1st, April 1st.

Appendix E. Vehicle Use Summary Report

Redwood National and State Parks Permitted Vehicle Beach Access Reporting

Fishermen Access Patrol Log Vehicle Track Observations

2009

Keith Bensen – Fish and Wildlife Biologist
January 2010

This report summarizes vehicle track data and observations collected in the course of doing snowy plover surveys, commercial beach fishermen and Yurok traditional use fishermen beach access data, and ranger patrol effort. This report includes calendar year 2009 information and is required under the terms of the section 7 formal consultation with the US Fish and Wildlife Service on Redwood National and State Parks' (RNSP) action of permitting vehicle access on park beaches.

RNSP provides a permit for commercial fishing on Gold Bluffs Beach, and the beaches north and south of Redwood Creek (Freshwater Beach/Spit and Mussel Beach), a permit for Yurok traditional use activities on Gold Bluffs Beach, and a permit for commercial fishing on Crescent Beach. Mobility impaired sport fishermen can also obtain a permit for vehicle access to the beaches north and south of Redwood Creek, or a permit for Crescent Beach. The Crescent Beach permits (commercial and sport) are currently administered by the NPS Chief Ranger at park headquarters in Crescent City, and all others are currently administered by the state park ranger at Gold Bluffs Beach. Ten commercial fishing permits were issued for Crescent beach in 2009. Thirteen commercial fishing permits were issued for the beaches north and south of Redwood Creek and Gold Bluffs Beach in 2009. Two Native American Special Use Permits were issued for Gold Bluffs Beach in 2009. Four mobility impaired permits were issued in 2009, all for Crescent Beach.

Vehicle Track Data

Table 1 below (next page) summarizes the vehicle track observations made during snowy plover surveys. Like last year's observations, the most vehicle tracks were on Gold Bluffs Beach (north and south reaches). However, unlike last year but like 2007, tracks were observed above the wave slope outside the permitted area on North Gold Bluffs Beach and Crescent, Freshwater, and Mussel Beaches. Overall beach driving appears to

have increased in 2009 as compared to 2008 but was comparable to 2007 (Table 1).

Table 1. Summary by beach of number of surveys and numbers of vehicle track set observations, 2007-2009.

Beach	No. Surveys			Track Sets* Observed												No. of surveys with tracks above wave slope		
				0			1-2			3-5			>5					
Year	07	08	09	07	08	09	07	08	09	07	08	09	07	08	09	07	08	09
Crescent	7	9	7	5	5	5	2	0	2	0	2	0	0	0	0	0	0	1
Fresh-water	16	20	17	6	13	7	6	3	8	1	3	0	4	1	2	0	0	2
Mussel	7	8	7	1	4	2	3	3	3	0	0	2	3	1	0	1	0	3
Major South (GBB)	7	4	7	6	3	1	1	0	5	0	0	1	0	1	0	0	0	0
South Gold Bluffs	16	19	17	2	7	1	7	2	4	0	3	4	7	7	8	3	2	0
North Gold Bluffs	16	19	17	1	5	4	2	4	5	4	2	2	9	8	8	4	0	3

* A "track set" is defined as two parallel tracks made by one vehicle. A vehicle driving out and back in the same tracks would result in one set, out and back in different locations would result in two sets.

Vehicle Observations

Corresponding with track observations, the majority of vehicle observations were on Gold Bluffs Beach. On North Gold Bluffs beach vehicles were observed on seven of the nineteen surveys; one vehicle was observed on six surveys and two vehicles were observed on one survey. Vehicles were observed during two of the seventeen surveys on South Gold Bluffs, with one vehicle observed during one survey and two vehicles were observed during the other survey. In contrast only one vehicle was observed once on Crescent Beach and twice on Freshwater Spit. No vehicles were observed on Mussel Beach or Major South Beach.

Fishermen Catch/Access Log Data

This was the fifth year permittees were required to submit beach access fishing logs. Permittees that did not fish also were required to submit logs stating that they did not fish during the permit year.

Freshwater Spit, Mussel Beach, and Gold Bluffs Beach - In 2009 there were 12 access

permits issued to commercial fishermen under the new section 10 legislation, one permit issued to commercial fishermen under the existing GP/GMP, and two to Native Americans for traditional use activities. Of these, 14 permittees turned in catch logs. All but two permittees reported fishing during the permit year.

Reported access among the fishermen that turned in logs was variable. However, most fishermen accessed the beach during May through July, both day and night. Those that did fish made from 4 to 137 (mean = 44, SD = 47) trips during the year, and averaged approximately 6 hours per trip.

Crescent Beach - Six of ten commercial permittees submitted beach logs in 2009. Of those, one reported that he did not fish. Those that did fish made from one to seven trips during the year, and averaged approximately three hours per trip. Four mobility impaired recreational fishing access permits were also issued. Recreational mobility impaired fishermen are not required to submit fishing logs.

Ranger Patrols and Citations

Freshwater Spit, Mussel Beach, and Gold Bluffs Beach-

Freshwater Spit – Regular patrols were conducted on almost a daily basis by NPS south district rangers. There were no observed unauthorized vehicle beach access activities by commercial fishermen or visitors. There were no compliance issues or citations issued to commercial fishermen this year.

Gold Bluffs Beach – The CDPR Gold Bluffs Beach ranger patrolled the entire beach by vehicle four times during 2009, and did 15 foot patrols south of Fern Canyon. There were no visitor compliance issues discovered during these patrols. There were no compliance issues or citations issued to commercial fishermen this year.

Crescent Beach - Regular patrols of the area were done by NPS north district rangers. There were no observed unauthorized vehicle beach access activities by commercial fishermen or visitors. There were no compliance issues or citations issued to commercial fishermen this year.

FILE COPY



United States Department of the Interior



In Reply Refer To:
8-14-2001-F-0953
81331-2010-F-0021

FISH AND WILDLIFE SERVICE
Arcata Fish and Wildlife Office
1655 Heindon Road
Arcata, California 95521
Phone: (707) 822-7201 FAX: (707) 822-8411

JUL 02 2010

Memorandum

To: Park Superintendents, Redwood National and State Parks
Crescent City, California

From: Field Supervisor 
Arcata, California

Subject: Formal Consultation on Vehicle Beach Access in Redwood National and State
Parks, Humboldt and Del Norte Counties, California

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed Vehicle Beach Access in Redwood National and State Parks (Parks), Humboldt and Del Norte Counties, California, and its effects on the federally endangered beach layia (*Layia carnosa*) and threatened western snowy plover (*Charadrius alexandrinus nivosus*; plover). This document was prepared in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*)(Act). Your request for formal consultation was received on March 15, 2010.

This biological opinion is based on information provided in the March 2010, Vehicle Beach Access Biological Assessment (biological assessment) and other sources of information. Documents related to this consultation are on file in this office.

Consultation History

The consultation history for this action, prior to April 2006, is summarized in the April 12, 2006, Biological Opinion issued to the Parks on vehicle beach access. The consultation history from April 2006 through April 2008, is summarized in the April 29, 2008, Biological Opinion issued to the Parks on vehicle beach access.

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The 2008 Biological Opinion was valid through March 31, 2010. Continuation of vehicle beach access was discussed at an interagency consultation team meeting on November 10, 2009. The primary issue discussed was potential changes to the vehicle beach access permitting process.

Beach Layia Determination

The Parks determined that the proposed project may affect, but is not likely to adversely affect beach layia. For a complete project description, refer to the biological assessment and the description of the proposed action in the following biological opinion.

Beach Layia Population Status and Distribution

The only known beach layia population in the Parks occurs on Freshwater Spit. This population appears to be stable, or slightly increasing, and currently consists of four or five main plant clusters with individual plants scattered between the main clusters. There is approximately 0.5 acre of occupied habitat on Freshwater Spit. In 2000, all potential habitat in the Parks was surveyed. The best potential unoccupied habitat occurs north of Major Creek to Carruther's Cove along Gold Bluffs Beach.

Service Determination

The Service concurs with your determination that the proposed project may affect, but is not likely to adversely affect, beach layia based on the following factors:

Habitat Modification

1. No suitable habitat will be removed or degraded.

Injury/Mortality

Injury and/or mortality of beach layia plants are not anticipated because of the following:

1. No vehicles or all-terrain vehicles (ATVs) are allowed in occupied or suitable beach layia habitat.
2. There is a potential for impacts from unauthorized vehicle use to occur in occupied habitat. However, this is considered unlikely because most of the unauthorized vehicle use at Freshwater Spit has been observed near the vehicle entry points. The nearest vehicle access point is approximately 0.25 mile from the population. Vehicle tracks have not been noted in proximity to the population. Because of Freshwater Spit's location near Highway 101 and the Parks' Redwood Information Center, unauthorized vehicle use is likely to be observed and reported.
3. If monitoring indicates vehicles are driving in or around the beach layia population, consultation will be reinitiated.

Beach layia will not be addressed further in this biological opinion. Unless new information reveals effects of the proposed action that may affect this species in a manner or to an extent not considered, no further action pursuant to the Act is necessary relative to beach layia. The following biological opinion will only address impacts to the western snowy plover.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Project Description

The Parks are proposing to continue allowing limited street-legal, 4-wheel drive, vehicle access on the following four beaches: Freshwater Spit/Beach, Mussel Beach, Gold Bluffs Beach, and Crescent Beach. The Parks allow vehicle access to the public through a permit system for the following types of activities: commercial fishing, sport fishing for the mobility impaired, and Native American traditional activities. The Parks' also allow vehicle access for law enforcement, Park staff, and contractors. Three vehicle access points exist along Freshwater Spit/Beach, one access point at Mussel Beach, and one access point at Gold Bluffs Beach. Crescent Beach is accessed from one location along Del Norte County's South Beach, which borders Crescent Beach to the north. All of the access points, except for Crescent Beach, have locked gates.

Permit holders must adhere to a list of conditions identified on the permit. Vehicles are required to stay on the waveslope. The permit defines the waveslope as the area that was wetted by the wave action of the previous high tide, and does not include any vegetated areas. All permit holders may access the beaches throughout the year during the day and night. Peak smelt runs occur at night from March through June and during the day from May through August. Commercial surf perch season is open every month except May, June, and July, with most fishing in the Parks occurring during the two months prior and after the closure. Generally, fishing begins approximately 1 hour after the high tide begins to recede. During peak fish runs, there may be 2 to 6 vehicles on the beach at any one time. Park records show that vehicles are present on Gold Bluffs Beach every month of the year.

The Parks' 1998 General Management Plan/General Plan (GMP/GP) provides direction regarding vehicular access and issuance of access permits for the purpose of commercial fishing, as well as access by Native Americans for traditional activities. In 2006, Congress passed P.L. 109-362. This Federal legislation addressed issuance of vehicle access permits on National Park Service lands. As a result of this legislation, vehicle access permits issued for Freshwater Spit/Beach and Mussel Beach will be perpetual, and subject to the same conditions as the permits held on the date of the enactment of the Northern California Coastal Wild Heritage Wilderness Act. Vehicle access permits for Gold Bluffs Beach and Crescent Beach will continue as directed under the GMP/GP. Under the GMP/GP, vehicle use associated with commercial fishing will continue by a renewable, nontransferable annual permit only. Only permits issued between March 1996 and September 1, 1999, will be renewed, no new permits will be issued, and any

permit not renewed in a given year will be terminated. Access permits for the mobility impaired for sport fishing will be discontinued when the last permit under the GMP/GP expires. Vehicle use on beaches in connection with traditional Native American activities, that are consistent with the purposes of the Parks, will continue at Gold Bluffs Beach in perpetuity.

Types of Permitted Activities

Vehicle use for Commercial Fishing

The permit system for Freshwater Spit/Beach and Mussel Beach is administered by the National Park Service. A maximum of 17 permits may be issued. The number of permits for commercial fishing on these beaches will not change; however, the actual permit holders will change over time due to non-renewal, death, or revocation. There were 14 permits issued for Freshwater Spit/Mussel Beach in 2008 and 2009.

The permit system for Gold Bluffs Beach is administered by the California Department of Parks and Recreation. Permits for Crescent Beach are administered by the National Park Service. Issuance of permits for commercial fishing access is being phased out at Gold Bluffs Beach and Crescent Beach under direction of the GMP/GP. Under the GMP/GP, only those commercial fishers that held a permit issued between March 1996 and September 1, 1999, were allowed to continue in the vehicle beach access permit program. Those permits not renewed prior to the end of the permit year will be considered expired and will not be reissued. In 2008, and again in 2009, 14 commercial fishing permits were issued for Gold Bluffs Beach. In 2009, 13 permits were issued, and in 2009, 10 permits were issued for Crescent Beach.

According to the permit holders' catch logs provided in 2007, most fishers accessed beach areas during May through July in the day and night. Permit holders made from 10-129 trips during the year and averaged 3.7 hours per trip.

Vehicle Use for Sport Fishing for the Mobility Impaired

Sport fishing is allowed year round; however, most of the activity occurs from May through September. Sport fishing permits for mobility impaired persons are issued for all the beaches, except Gold Bluffs Beach. There are no restrictions on the number of permits that can be issued. In 2009, four permits were issued for Crescent Beach. The Parks plan to discontinue issuing this type of permit when the last GMP/GP commercial fishing permit expires.

Vehicle Use for Native American Traditional Activities

Permits for Native American activities are only issued for Gold Bluffs Beach. Access by Yurok Native Americans (Yurok) for traditional activities on Gold Bluffs Beach is authorized under North Coast Redwoods District Policy #94-10-635. Native American permit holders primarily access the beach for the purpose of catching smelt and surf perch or collecting mussels. In 2008 and 2009, two traditional use permits were issued. There are no plans to phase out this type of permit and no limit on the number of permits that may be issued.

Vehicle Use for Law Enforcement, Park Activities, and Contractor Activities

Park rangers and visitor services staff may access the Parks' beaches with 4-wheel drive and ATVs. There is no limit on the frequency of vehicle use for park rangers. The biological assessment estimates that 1 to 5 percent of all vehicle use on the beaches is attributed to park rangers. Resource management staff may use 4-wheel drive and ATVs for activities related to plover management. The Parks will minimize vehicle use to the greatest extent possible by limiting use to areas of the beach that would be difficult to reach on foot in a timely manner. All permit conditions apply to park staff. Vehicle beach access for specific projects, including the use of heavy equipment, will be covered in separate consultations.

Wood Gathering

Permit holders are not allowed to gather firewood on Gold Bluffs Beach. Wood gathering is allowed for personal use on Freshwater Spit/Beach, Mussel Beach, and Crescent Beach for mobility impaired sport fishing permit holders and at Crescent Beach for commercial fishing permit holders. Fires are required to be either in an established fire ring or on the waveslope. Permittees are not allowed to drive vehicles above the waveslope to collect firewood.

Monitoring and Enforcement*Monitoring*

Parks' Resource Management staff will continue to record information on vehicles and vehicle track presence while conducting plover and beach carcass surveys. Direct observations of vehicles outside of permitted areas, or observations of vehicles traveling at a rate of speed exceeding the maximum allowed will be reported immediately to the appropriate law enforcement rangers. If vehicle tracks outside of permitted areas are documented on 50 percent or more of the plover surveys, Parks will notify all permit holders in writing that permit conditions have been violated and beach access may be temporarily suspended, if vehicle tracks continue to be observed outside of permitted areas.

From 2005 through 2009, vehicle track observations were noted during plover and beach carcass surveys. The highest number of vehicles, vehicle tracks, and tracks above the waveslope were on Gold Bluffs Beach (north and south reaches), followed by Freshwater Spit/Beach and Mussel Beach. Violations of the permit condition to drive only on the waveslope were observed on north Gold Bluffs Beach (Fern Canyon to Carruther's Cove) during 36 percent of the surveys in 2005; 21 percent of the surveys in 2006; 25 percent of the surveys in 2007; none of the surveys in 2008; and 18 percent of the surveys in 2009. Violations of the permit condition to drive only on the waveslope were observed on south Gold Bluffs Beach (Fern Canyon to Major Creek) during 42 percent of the surveys in 2005; 25 percent of the surveys in 2006; 19 percent of the surveys in 2007; 10 percent of the surveys in 2008; and none of the surveys in 2009.

Enforcement

Freshwater Spit/Beach, Mussel Beach, Gold Bluffs Beach, and Crescent Beach will continue to be patrolled by National and State Park rangers. In addition, Parks will implement the following law enforcement measures:

- 1) Freshwater Spit/Beach will be patrolled weekly during May to September, from the adjacent highway. Rangers will occasionally patrol the beach north of Redwood Creek on foot or using an ATV. Occasionally, rangers will perform surveillance and patrols at night. During the off-season, rangers will patrol on a more infrequent basis, depending on staffing levels. If plovers are observed on the beaches, patrols will increase to the level that staffing allows but are not expected to change significantly from current levels.
- 2) Gold Bluffs Beach will usually be patrolled once per month in late spring or summer. Patrols will be conducted by truck or ATV. During the winter months patrols will usually not occur. When plovers are nesting or have broods, patrols will increase to the level that staffing allows, but are not expected to change significantly from current levels. In 2009, the entire beach was patrolled four times.
- 3) Crescent Beach will be monitored for vehicle use several times per week from the Crescent Beach Overlook. If plovers are observed on the beaches, patrols will increase to the level that staffing allows but are not expected to change significantly from current levels.
- 4) Rangers will fill out a Beach and Dunes Patrol Log documenting the date and time they patrol the beach, area patrolled, compliance issues, fisher contacts, or citations issued.

Conservation Measures

When used in the context of the Act, “conservation measures” represent actions proposed by the Federal agency that are intended to further the recovery of and/or to minimize or compensate for project effects on the species under review. Because conservation measures are pledged in the project description by the action agency, their implementation is required under the terms of the consultation (USDI Fish and Wildlife Service and USDC National Marine Fisheries Service 1998).

Recovery Measures

As part of this proposed action, the Parks are not proposing to include any measures to further the recovery of the plover. However, the Parks’ on-going program to remove European beachgrass (*Ammophila arenaria*) from their beaches is an important plover recovery action.

Minimization Measures

The Parks will implement the following measures to minimize project effects on plovers:

- 1) Maximum vehicle speed limit on the beach is 20 miles per hour (mph). When adult plovers are present on Gold Bluffs Beach from January 1 through February 29, the speed limit is reduced to 10 mph. From March 1 through September 30, the speed limit is reduced to 5 mph in designated temporary nest and brood protection areas.
- 2) Commercial beach fishermen accessing Freshwater Beach/Spit, Mussel Beach, and Gold Bluffs Beach; and Yurok permittees, must attend a training session on plover biology, identification, and status. The content of the training will be approved by the Parks.
- 3) Commercial beach fishermen and Yurok permittees are required to keep a log of all beach trips. The logs will be submitted to the Parks quarterly. The log will include permittee's name, location, date, time arrived on beach, time left beach, and catch data. Failure to provide beach access log information will result in either the suspension of the permit until the information is provided or revocation of the permit if noncompliance is continual.
- 4) Plover surveys will be conducted, at a minimum, twice a month from March through September and once a month from October through February on all the Parks beaches, except Crescent and Mussel beaches, which will be surveyed monthly during the breeding season.
- 5) The presence of wintering plovers will result in implementation of the following management actions:
 - a) If two or more plovers are detected within 0.25 mile of a high visitor use area from October 1 through January 31, or two or more plovers are detected anywhere during February, then surveys will be increased to twice/monthly and plover information will be posted at access points.
 - b) If two or more plovers are detected within 0.25 mile of a high visitor use area on two consecutive surveys in February, Parks management staff will designate a temporary winter protection area (WPA). Signs and symbolic fencing will be used to delineate the WPA; however, the WPA will not include the waveslope. No human access will be allowed in the WPA, but the waveslope adjacent to the WPA will remain open to people and permitted vehicles. The WPA may extend up to 0.25 mile north and south of the plovers and include the sandy beach up to 1,000 feet inland from the waveslope.
- 6) The presence of plovers during the breeding season (March 1 through September 30) will result in implementation of the following measures:
 - a) An increase in monitoring to weekly. If nesting or brood presence is confirmed, monitoring will increase to more than once a week if the Parks or Service determine it is necessary.
 - b) If two or more plovers are detected within 0.25 mile of a high use area, Parks' management staff will designate a temporary plover protection area (PPA). Regulatory signs and symbolic fencing will be used to designate the PPA, which could extend up to 0.25 mile north and south of the plovers and include the sandy beach up to 1,000 feet

inland from the wave slope. No human access will be allowed in the PPA, but the waveslope adjacent to the PPA will remain open to people and permitted vehicles.

- c) If nesting occurs, a temporary nest protection area (NPA) will be designated. Regulatory signs and symbolic fencing will be used to designate a NPA that could extend up to 0.25 mile north and south of the nest. No human access will be allowed in the NPA, but the adjacent waveslope will remain open to people and permitted vehicles. Vehicles travelling on the waveslope adjacent to a NPA will be required to travel at 5 mph.
 - d) Authorized personnel with the appropriate level of training will erect predator exclosures around nests if the Parks and Service determine it is necessary.
 - e) When chicks are present, signs and symbolic fencing will be used to designate a temporary brood protection zone (BPZ) until the chicks fledge. Chicks are considered fledged at 35 days of age, or when observed in sustained flight for at least 50 feet, whichever occurs first. The BPZ could extend up to 4 miles north and south of the nest site. The BPZ includes the waveslope and the sandy beach area up to 1,000 feet inland from the wave slope. Within the BPZ, the beach will be closed to dogs, horses, and kite flying, but the waveslope will be open to pedestrians and daytime vehicle traffic.
 - f) Maximum vehicle speed limit in designated NPAs and BPZs will be 5 mph. Restrictions on vehicle speed will begin as soon as a nest(s) or chick(s) are discovered and will continue until the chicks have fledged.
 - g) When plover chicks are present, the entire beach segment will be closed to night-time driving. Restrictions on night-time driving will begin on or before the date that hatching begins and will continue until the chicks have fledged.
 - h) Within the BPZ, if a brood consistently uses an area within 0.25 mile of a high visitor use area, signs and symbolic fencing may be used to designate a temporary brood protection area (BPA). The BPA could extend 0.25 mile north and south of the brood's location. No human access would be allowed within the BPA, but the waveslope adjacent to the BPA would be open to pedestrians and permitted vehicles.
- 7) Beach regulatory signs will be mounted so as not to provide predator perches.
- 8) Law Enforcement rangers will communicate with all permit holders about the presence and approximate location of plovers, nests, and broods. Information about temporary restrictions relative to plovers will be mailed to all permit holders.

Reporting

The Parks will provide information on violations, vehicle activity levels, and vehicle track observations from ranger patrol logs, permittee beach access logs, and observations recorded during plover surveys to the Service in an annual report.

Action Area

For purposes of this biological opinion, the action area includes the following four beaches located within the Parks: Freshwater Spit/Beach between Gyon Bluff and the mouth of Redwood Creek; Mussel Beach between the mouth of Redwood Creek and Mussel Point; Gold Bluffs Beach between Mussel Point and the north end of Carruther's Cove; and Crescent Beach from the Crescent Beach overlook north to the National Park boundary.

Time-frame of Biological Opinion

This biological opinion is valid from the date of issuance through March 31, 2015.

STATUS OF THE SPECIES: Western Snowy Plover

Legal Status

The Pacific Coast population of the western snowy plover was federally listed as threatened on March 5, 1993 (USDI Fish and Wildlife Service 1993). On July 29, 2002, we received a petition from the Surf Ocean Beach Commission of Lompoc to delist the Pacific Coast western snowy plover population. The City of Morro Bay submitted substantially the same petition dated May 30, 2003. On March 22, 2004, we announced an initial (90-day) finding that the petition presented substantial information to indicate that delisting may be warranted, triggering a status review (USDI Fish and Wildlife Service 2004a). On April 21, 2006, we issued a 12-month finding that (1) the Pacific Coast western snowy plover population constitutes a valid distinct population segment (DPS) as per our 1996 DPS policy, (2) delisting is not warranted due to the continued existence of threats to the DPS and its habitat, and (3) the DPS should remain classified as threatened (USDI Fish and Wildlife Service 2006a). On April 21, 2006, we published a proposal for a special rule under section 4(d) of the Act that would exempt certain actions in areas meeting population goals, from the section 9 take prohibitions of the Act (USDI Fish and Wildlife Service 2006b).

In California, the western snowy plover has been classified by the California Department of Fish and Game as a "species of special concern" throughout all of California since 1978 (California Natural Diversity Database 2001). The western snowy plover is State-listed as threatened in Oregon and as endangered in Washington, under those States' respective laws and regulations.

Critical habitat was designated on December 7, 1999 (USDI Fish and Wildlife Service 1999). On June 19, 2003, the U.S. District Court for the District of Oregon (Court) found that our critical habitat designation was not consistent with the requirements of section 4(b)(2) of the Act, and remanded the designation to us; the Court partially vacated the 1999 critical habitat designation. On December 17, 2004, we published a proposed rule to re-designate critical habitat along the coasts of California, Oregon, and Washington (USDI Fish and Wildlife Service 2004b). On September 29, 2005, we published a final rule designating critical habitat (USDI Fish and Wildlife Service 2005). On October 2, 2008, the Service was challenged again regarding the adequacy of the 2005 critical habitat rule, in a complaint filed by the Center for Biological Diversity. Specifically, the plaintiffs alleged that: 1) not enough critical habitat was

designated in 2005; 2) the 2005 rule did not adequately address differences between the 2005 designation and those sites designated in the 1999 rule; 3) there were improper exclusions; 4) the Economic Analysis was flawed; 5) the Service relied on an invalid definition of adverse modification; 6) there was political influence from the Department of Interior's Deputy Assistant Secretary; and 7) issues with the Primary Constituent Elements used to designate critical habitat. The Service took a voluntary remand, which was accepted by the plaintiffs and the Court. The revised final critical habitat rule is due June 5, 2012.

Taxonomy and Life History

Accounts of the taxonomy, ecology, and reproductive characteristics of the western snowy plover are found in the following recent publications: final rule listing the Pacific Coast population of the western snowy plover as threatened (USDI Fish and Wildlife Service 1993); final rule designating critical habitat (USDI Fish and Wildlife Service 2005); 12-month finding (USDI Fish and Wildlife Service 2006a); recovery plan and appendices (U.S. Fish and Wildlife Service 2007); and *Snowy Plover* (Page et al. 1995).

Along the west coast of the United States, the plover nesting season extends from early March through late September (U.S. Fish and Wildlife Service 2007). In California, pre-nesting bonds and courtship activities of western snowy plovers have been observed as early as mid-February (U.S. Fish and Wildlife Service 2007). The earliest nest initiation dates in Humboldt County have been as follows: March 25, 2001; March 19, 2002; March 18, 2003 (Colwell, et al. 2002); and March 26, 2004 (Colwell, et al. 2004). In general, the breeding season for the Recovery Unit 2 (i.e., Del Norte, Humboldt, and Mendocino counties) is defined as March 1 through September 30.

Nests are a depression in the sand, usually with a clutch of three eggs. The eggs' small size and cryptic markings help to camouflage them on the sand (Persons 1998). Incubation begins at the laying of the final egg and continues for 25 to 32 days, after which hatching begins (Persons 1998). Snowy plover chicks are precocial, leaving the nest within hours after hatching to search for food (Page et al. 1995). Adult plovers do not feed their chicks but lead them to suitable feeding areas (U.S. Fish and Wildlife Service 2007). When alarmed, young chicks lie flat on the ground and older chicks run (Persons 1998). The chicks are unable to fly until 28 to 33 days after hatching (U.S. Fish and Wildlife Service 2007).

Threats

At the time of listing in 1993, the primary threat to the plover was the loss and degradation of habitat from encroachment of European beachgrass, extensive human recreational use of nesting areas, and human development of the coast (USDI Fish and Wildlife Service 1993). Currently, the most important threats are ongoing habitat loss and fragmentation; mortalities, injuries, and disturbance resulting from human activities; and lack of comprehensive State and local regulatory mechanisms (USDI Fish and Wildlife Service 2006a).

Conservation Needs/Strategy

The western snowy plover recovery plan provides a strategy for recovery of the listed population (U.S. Fish and Wildlife Service 2007). Recovery objectives in the recovery plan include: (1) increasing population numbers distributed across the range; (2) conducting intensive ongoing management for the species and its habitat and developing mechanisms to ensure management in perpetuity; and (3) monitoring populations and threats to determine success of recovery actions and refine management actions.

The recovery plan states that delisting will be considered when the following criteria have been met: (1) an average of 3,000 breeding adults has been maintained for 10 years, distributed among 6 recovery units as follows: Washington and Oregon, 250 breeding adults; Del Norte to Mendocino counties, California, 150 breeding adults; San Francisco Bay, California, 500 breeding adults; Sonoma to Monterey counties, 400 breeding adults; San Luis Obispo to Ventura counties, California, 1,200 breeding adults; and Los Angeles to San Diego counties, California, 500 breeding adults; (2) a yearly average productivity of at least 1.0 fledged chick per male has been maintained in each recovery unit in the last 5 years prior to delisting; and (3) mechanisms have been developed and implemented to ensure long-term protection and management of breeding, wintering, and migration areas to maintain the subpopulations sizes and average productivity specified in criteria 1 and 2.

Appendix B of the recovery plan identifies specific breeding and wintering locations important for recovery (U.S. Fish and Wildlife Service 2007). The recovery plan provides guidance on management potential for the breeding locations. The management potential breeding numbers are based on the best professional judgment of the technical subteam of the plover recovery team and are indications to land managers of the potential productivity of various areas for plovers. In some cases, these numbers are about 20 percent higher than the recovery criteria subpopulation sizes, but lower than potential carrying capacity.

The Service considers the Pacific Coast plover population to be a single management entity (U.S. Fish and Wildlife Service 2007). The recovery team recommended that no state, geographic, region, or subpopulation be considered for delisting separately from the others. To consider delisting, the recovery criteria will need to be achieved in each recovery unit.

A population viability analysis was conducted to aid the recovery team in developing recovery criteria for the recovery plan (Nur et al. 1999). The analysis makes the following conclusions. "Under status quo scenarios, even with intensive management in some areas, the population is almost certain to decline. Without question, ceasing current management efforts (area closures, predator exclosures, and predator control) would be disastrous for the Pacific Coast population." "Recovery is plausible. It will require; however, short-term intensive management and long-term commitments to maintaining gains" (Nur et al. 1999). These conclusions emphasize the immediate need for intensive management. The most direct means to increase population size is to enhance reproductive success throughout the listed range (Nur et al. 1999).

The population viability analysis suggests that reproductive success between 1.2 to 1.3 fledglings per male per year, with adult survival of 76 percent and juvenile survival of 50 percent, provides

a 57 to 82 percent probability of reaching a population of 3,000 plovers within 25 years (Nur et al. 1999). Enhancing productivity is critical to population growth. Once the population size criterion is met, a lower rate of productivity can sustain the population (U.S. Fish and Wildlife Service 2007).

Lands managed by Federal agencies are key to the conservation of the plover. The role of Federal lands in achieving recovery of the plover is described in the recovery plan as follows. Under section 7(a)(1) of the Act, Federal agencies are directed to actively promote the conservation of listed species. The plover cannot be recovered simply through general habitat protection or compliance with required section 7 consultations. The plover must be actively monitored and managed for the purpose of recovery or its population size will continue to decline. Federal agencies alone cannot assure recovery of the plover, but should have a leading role in monitoring and management efforts to assure survival and recovery of this species. Federal agencies should develop site-specific management plans that address threats and adopt management measures for habitat protection and enhancement.

Plovers must also be actively monitored and managed to achieve recovery goals on State lands or their populations will decline. Regional, county, city, and private lands also need to serve a role in conserving breeding and winter habitats. The recovery plan identifies the following goals for these lands: 1) provide intensive management and protection of all breeding and wintering locations on State lands; 2) develop and implement site-specific habitat conservation plans to minimize and mitigate impacts and measures for habitat protection and enhancement on State lands; and 3) encourage and assist local governments and private landowners to develop and implement habitat conservation plans.

Current Conditions (Range-wide)

The current conditions incorporate effects of all past human and natural activities or events that have led to the present-day status of the species (USDI Fish and Wildlife Service and USDC National Marine Fisheries Service 1998). The current known breeding range of Pacific Coast western snowy plover population extends from Damon Point, Washington, to Bahia Magdalena, Baja California, Mexico (USDI Fish and Wildlife Service 2006a). The recovery plan identifies the following six recovery units for the Pacific Coast population: Unit 1 includes Washington and Oregon; Unit 2 includes Del Norte, Humboldt, and Mendocino counties, California; Unit 3 includes San Francisco Bay, California; Unit 4 includes Monterey Bay, California; Unit 5 includes San Luis Obispo, Santa Barbara, and Ventura counties, California; and Unit 6 includes Los Angeles, Orange, and San Diego counties, California (U.S. Fish and Wildlife Service 2007).

Habitat and Population

Breeding Habitat (Amount and Quality)

The Pacific Coast population is defined as those individuals nesting adjacent to tidal waters of the Pacific Ocean and includes all nesting birds on the mainland coast, peninsulas, offshore islands, adjacent bays, estuaries, and coastal rivers (USDI Fish and Wildlife Service 2004b). The Pacific Coast population breeds primarily above the high tide line on coastal beaches, sand spits,

dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries (U.S. Fish and Wildlife Service 2007). Less common nesting habitat includes bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars (U.S. Fish and Wildlife Service 2007). Suitable nesting habitat is distributed throughout the listed range.

In the recovery plan, the Service identifies 108 breeding locations that are important for recovery (U.S. Fish and Wildlife Service 2007). Acreage and miles of coastline by recovery unit are estimated as follows: Recovery Unit 1 (138 miles of coastline and 18,055 acres); Recovery Unit 2 (77 miles of coastline and 12,907 acres); Recovery Unit 3 (2 miles of coastline and 3,259 acres); Recovery Unit 4 (51 miles of coastline and 5,932 acres); Recovery Unit 5 (93 miles of coastline and 9,651 acres); and Recovery Unit 6 (30 miles of coastline and 7,523 acres) (U.S. Fish and Wildlife Service 2007).

The Pacific Coast population has experienced widespread loss and degradation of nesting habitat at many nesting locations due to human disturbance, urban development, encroachment of introduced European beachgrass, and expanding predator populations. European beachgrass was introduced to the west coast around 1898 and now occurs from British Columbia to southern California (U.S. Fish and Wildlife Service 2007).

Breeding Population (Numbers, Distribution, and Reproduction)

Along the California coast the size of the Pacific Coast population was first estimated at 1,566 adults, based on window surveys completed during the period 1977 to 1980 (Table 1). Window surveys are a one-time pass of a single surveyor or team of surveyors through potential plover nesting habitat during May or June.

The recovery plan provides an estimate of approximately 2,000 plovers breeding along the U.S. Pacific Coast (Table 2). This estimate is based on window surveys, breeding surveys, and data used in the population viability analysis. The 2009 breeding season window survey in California counted 1,405 adult birds and the Oregon and Washington breeding season window survey counted 182 adult birds (Table 3). About 50 percent of the birds were located within the area of San Luis Obispo and Ventura Counties, California. The recovery plan states that delisting will be considered when an average of 3,000 breeding adults distributed among the 6 recovery units has been maintained for 10 years. The goal is for approximately 40 percent of the breeding adults to be located from San Luis Obispo to Ventura Counties. The Point Reyes Bird Observatory Conservation Science (PRBO) reports a U.S. Pacific Coast population estimate of 2,600 individuals (Stenzel, *in litt.* 2004). This range-wide figure was developed by applying a multiplier to window survey data in Washington, Oregon, and California. The multiplier is based on the known number of breeders from the PRBO's Monterey Bay study site compared to the number of breeders observed at the same location on window surveys.

Historical records indicate that nesting plovers were once more widely distributed and abundant in coastal Washington, Oregon and California. The plover population is sparse in Washington, Oregon, and northern California. In Washington, plovers formerly nested at five locations; compared to only three current sites. The number of plovers in Washington; however, appears to

be stable to increasing since the early 1990s. Population numbers in Washington range from a low of 19 adults in 1994 to a high of 68 in 2003.

In Oregon, plovers historically nested at 29 sites, compared to the 10 current locations. Survey data shows a general decline in breeding adults throughout coastal Oregon until 1994, at which time the trend reversed to an increase in breeding adults. Although the overall breeding population trend is still down from historical numbers, the period from 1994 to present has shown a slight increase.

In California, eight geographic area support over three-quarters of the statewide coastal breeding population. By the late 1970s, nesting plovers were absent from 33 of 53 breeding locations and since then plovers have disappeared from an additional 11 locations. Plovers have disappeared from significant parts of the coastal southern California breeding range including locations in San Diego, Orange, and Los Angeles counties. They have also disappeared or numbers are severely reduced at other historic sites in central California.

The fledging success of plovers (percentage of hatched young that reach flying age) varies greatly by location and year (U.S. Fish and Wildlife Service 2007). The recovery plan uses the annual number of young fledged per adult male to assess reproductive success. Reproductive success for various sites was as follows: (1) Monterey Bay without predator control and exclosures, males averaged 0.85 fledglings annually (1984 to 1991); with predator control and nest exclosures, males averaged 1.11 fledglings (1992 to 1997); (2) San Diego County with some indirect management activities, males averaged 0.92 fledged young (1995 to 1997); and (3) Oregon with intensive management, males averaged 1.04 fledglings (1993 to 1997) (Nur et al. 1999). The recovery plan states that delisting will be considered when a yearly average productivity of at least 1.0 fledged chick per male has been achieved in each recovery unit in the last 5 years.

Wintering Habitat (Amount and Quality)

Non-breeding (October 1 through February) plovers are found on many beaches used for nesting and some beaches where nesting does not occur (U.S. Fish and Wildlife Service 2007). In California, the majority of wintering plovers utilize sand spits and dune-backed beaches (U.S. Fish and Wildlife Service 2007). Suitable wintering habitat is distributed throughout the listed range of the plover.

In the recovery plan, the Service identifies approximately 150 wintering locations (U.S. Fish and Wildlife Service 2007). The Pacific Coast plover population has experienced widespread loss and degradation of wintering habitat due to human disturbance, development, and encroachment of introduced European beachgrass. Small changes in the adult survival rate can have relatively large effects on population stability (Nur et al. 1999), so the maintenance of quality overwintering habitat is important to conservation (USDI Fish and Wildlife Service 2004b).

Wintering Population (Numbers and Distribution)

Both coastal and interior nesting plover populations use coastal locations in winter. Fewer than 40 plovers winter on the Washington coast, fewer than 100 winter on the Oregon coast, more than 2,500 winter along the California coast, and hundreds more at San Francisco Bay and in the Channel Islands (U.S. Fish and Wildlife Service 2007). In 1986, the estimated winter population for the California and Oregon coast was 3,100 plovers (Page et al. 1986). The 2008-2009 winter window survey numbers for Washington, Oregon, and California are 19, 135, and 3,205 respectively, totaling 3,688 individuals (U.S. Fish and Wildlife Service, unpublished data).

Plovers winter at two locations on the Washington coast, at nine locations on the Oregon coast, and at various locations along the California coast (U.S. Fish and Wildlife Service 2007). The majority of wintering birds in California are found from Sonoma County southward.

Current Conditions (Recovery Unit 2 - Del Norte, Humboldt, and Mendocino Counties)Habitat and Population*Breeding Habitat - Amount and Distribution*

The proposed project is located within Humboldt and Del Norte counties, California, within Recovery Unit 2. The recovery plan identifies 12 breeding locations in Recovery Unit 2 that are important for recovery (Table 4). Since 1999, nesting has been documented at 8 of these 12 locations: Big Lagoon, Clam Beach/Little River; Mad River Beach, south spit of Humboldt Bay; Eel River Wildlife Area; Eel River gravel bars, Centerville Beach, and MacKerricher State Park (LeValley 1999; Mad River Biologists 2000; Colwell et al. 2001; Colwell et al. 2005a; Colwell et al. 2007). In recent years, nesting has also been documented at the following sites not included in the recovery plan list: Gold Bluffs Beach and Stone Lagoon (Humboldt County) and Manchester State Park (Mendocino County) (Colwell et al. 2004; Colwell et al. 2009). Nesting at many of these locations is inconsistent; usually only 1 or 2 continuous years. During the past 9 years, Clam Beach and the Eel River gravel bars are the only locations that have had breeding plovers every year; these two sites also averaged the highest plover abundance in beach and river habitats, respectively (Colwell et al. 2009).

Since 1977, plovers have nested at 2 locations in Del Norte County, 11 locations in Humboldt County, and 2 locations in Mendocino County (Page and Stenzel 1981; LeValley 1999; Mad River Biologists 2000; Colwell et al. 2001; Colwell et al. 2004). Since 1999, no nesting has been documented at the following historic Del Norte County nesting areas: Lake Talawa and Smith River spit, and no nesting has been documented at the following historic Humboldt County nesting areas: Lanphere Dunes, Samoa spit, and Elk River. In summary, since the late 1970's the number of known nesting locations has declined 100 percent in Del Norte County, 33 percent in Humboldt County, and remained the same in Mendocino County.

Breeding window surveys conducted in Recovery Unit 2 since 1977, have documented plovers during the breeding season at the following 15 locations: Del Norte County – Lake Earl/Lake Talawa and Smith River spit; Humboldt County – Gold Bluffs Beach, Big Lagoon, Clam

Beach/Little River, Mad River spit, Lanphere Dunes, north spit of Humboldt Bay, south spit of Humboldt Bay, Eel River gravel bars, Eel River Wildlife Area, and south spit of Eel River; Elk River spit, and Mendocino County - MacKerricher and Manchester State Parks. Clam Beach/Little River is the only beach in Humboldt County where birds were sighted during every survey year during the window surveys. Since 1991, plovers have not been present during the window survey period in the following four locations: Smith River spit, Lake Earl/Lake Talawa, Lanphere Dunes, and Elk River spit. Since 2000, plovers have consistently only occurred at two locations (Clam Beach/Little River and the Eel River gravel bars).

Breeding Habitat - Quality

Quality of breeding habitat (as measured by reproductive success) may be influenced by a combination of factors, including predation of eggs and chicks, food availability, natural disturbance associated with weather, and human effects (Colwell et al. 2005b). The Pacific Coast population is threatened by loss of nesting habitat from encroachment of European beachgrass, extensive human recreational use, and predation (USDI Fish and Wildlife Service 1993).

In Humboldt County, the Eel River gravel bars have produced a disproportionately greater number of fledged plover young than beach habitats (Colwell et al. 2005b). From 2001-2009, river-breeding plovers experienced comparatively high annual per capita reproductive success (fledglings per male) (1.70 ± 0.40) as compared to beach-breeding plovers (0.50 ± 0.49) (Colwell et al. 2009).

In coastal northern California, corvids are believed to be the principal predator of eggs and chicks (Colwell et al. 2005b). Surveys conducted from 2001-2004 found that corvids were 2-3 times more abundant on the Eel River gravel bars than beaches (Colwell et al. 2005b). Colwell et al. (2005b) suspect that differences in reproductive success in these two habitats may be partly due to the fact that eggs and chicks are more cryptic in the heterogeneous river bar substrates compared to the homogeneous substrates found on beaches.

Human activities may influence habitat quality, in the form of direct mortality to eggs or chicks, chronic disturbance limiting the amount of time that adults incubate eggs or brood chicks, or indirect effects such as attracting predators (Colwell et al. 2005b). Surveys conducted from 2001-2004 found that humans, dogs, and vehicles were 5-10 times more abundant on beaches than the Eel River gravel bars (Colwell et al. 2005b). Colwell et al. (2005b) have observed instances of humans directly causing clutch (e.g., vandalism of exclosures and removal of eggs, humans stepping on nests, vehicles driving over nests) or brood (e.g., humans lingering near a nest and keeping adults from brooding chicks in cold weather) failure. In 2009, humans were the second leading cause of clutch failure on Clam Beach (Colwell et al. 2009).

In 2004, daily morning observations were made of incubating plovers throughout the nesting season at Clam Beach (Colwell et al. 2004). The frequency with which human activities occurred within 162 yards of 11 nests (6 nests on the north section of Clam Beach and 5 nests on the south section) was recorded (Colwell et al. 2004). Human activities averaged nearly seven times greater on the north end than south end of the beach, although there was considerable

variation among nests (Colwell et al. 2004). Even though these observations are restricted to the vicinity of the nest sites, they are indicative of the relative levels of recreational activity on the north and south sections of Clam Beach. In 2003, 9 percent of the chicks on the north section fledged and 21 percent of the chicks on the south section fledged (Colwell et al. 2003).

During the 2004 and 2005 breeding seasons, symbolic fencing was used on the northern section of Clam Beach to provide refuge to breeding plovers and their broods. In 2004, 40 percent of the chicks hatched on the north section fledged and 69 percent of the chicks hatched on the south section fledged (Colwell et al. 2004). In 2005, 37 percent of the chicks hatched on the north section fledged and 24 percent of the chicks hatched on the south section fledged (Colwell et al. 2005a). In 2005, nests at Clam Beach hatched nearly twice the total number of chicks (48) than in any previous year (range: 17-28); however, only 31 percent of them survived (Colwell et al. 2005a). From 2004 through 2007, the use of symbolic fencing resulted in an increase in the number of chicks fledged (37 percent of 41 chicks fledged) compared to 3 years (2001-2002) when the fencing was not used (15 percent of 33 chicks fledged) (Colwell et al. 2007).

Breeding Population (Numbers, Distribution, and Reproduction)

In California, pre-nesting bonds and courtship activities are observed as early as mid-February (U.S. Fish and Wildlife Service 2007). From 2001 through 2004, the earliest nest initiation dates in Humboldt County have been as follows: 2003 (March 18), 2002 (March 19), 2001 (March 25), and 2004 (March 26) (Colwell et al. 2002; Colwell et al. 2003; Colwell et al. 2004). From 2001 through 2004, the latest nest initiation dates in Humboldt County have been as follows: 2002 (July 17), 2003 (July 15), 2004 (July 14), and 2001 (July 6) (Colwell et al. 2002; Colwell et al. 2003; Colwell et al. 2004).

In 2009, the population of breeding plovers (19; 10 males and 9 females) in Recovery Unit 2 was the lowest in 9 years (Colwell et al. 2009). There were no breeding plovers in Del Norte or Mendocino counties during the same time period (Colwell et al. 2009). The 2009 breeding population of 19 adults represents an almost 74 percent decline compared to the 72 adults observed in 2004 (Colwell et al. 2009).

During the 9-year period, 2001 through 2009, the average number of breeding plovers in Recovery Unit 2 was 50 (60 in 2001; 63 in 2002; 54 in 2003; 72 in 2004; 63 in 2005, 57 in 2006; 30 in 2007; and 30 in 2008) (Colwell et al. 2009). This 9-year average population number represents 25 percent of the recovery plan management goal of 200 breeding adults in Recovery Unit 2. For 2009, this breaks down to 0 percent of the management goal of 18 breeding adults in Del Norte County, 12 percent of the management goal of 162 breeding adults in Humboldt County, and 0 percent of the management goal of 20 breeding adults in Mendocino County.

At the end of 2006, adult survival for color-banded plovers breeding in Humboldt County was estimated to be 0.64 ± 0.07 for males, 0.57 ± 0.07 for females; and survival of juveniles from fledging to approximately 1 year was estimated to be 0.31 ± 0.04 (Colwell et al. 2007). These estimates are lower than those reported for a population breeding around Monterey Bay, California (Colwell et al. 2007). The population viability analysis for the listed subspecies assumed an adult survival rate of 76 percent for all subpopulations, but also modeled population

trajectories with adult survival rates of 75 and 77 percent (Nur et al. 1999). The results of the analysis showed that even a one percent change in adult survival can have a substantial impact on population growth (Nur et al. 1999). The adult survival rates of 57 to 64 percent for Humboldt County are significantly below the rate used in the population viability analysis. Colwell et al. (2007) concluded that the local population is sustained by immigration because algebraic estimates of population growth, based on the product of adult survival and fledging success, indicate a declining population ($\lambda=0.87$).

From 2001-2006, a high percentage of the beach nests were exclosed to increase hatching success. Exclosed nests experienced higher success than both unexclosed beach nests and river nests during each year (Colwell et al. 2007). Analysis of the 420 nests initiated by plovers over 7 years indicate that exclosures were an effective means of increasing hatch success (Colwell et al. 2007). Exclosures can enhance nesting success; however, they do not protect chicks after they leave the exclosure (Colwell et al. 2007).

In 2007, exclosures were not used to protect beach nests, due to the suspected depredation of eight adults incubating inside exclosures on Clam Beach in 2006 (Colwell et al. 2007). Reproductive success has been consistently low, especially since 2006 when the use of nest exclosures was discontinued (Colwell et al. 2009). In 2009, 71 percent of the nests (25/35) occurred at Clam Beach; only two of these hatched chicks; and none of the chicks survived longer than one week (Colwell et al. 2009).

In 2009, plover productivity in Recovery Unit 2 was the second lowest observed over the past 9 years (Colwell et al. 2009). In 2009, 19 breeding plovers initiated 35 nests, which hatched 15 chicks, fledging 9 chicks (Colwell et al. 2009). The comparatively low productivity in 2009 resulted from a disproportionate number of breeding plovers at Clam Beach/Little River where reproductive success was poor (Colwell et al. 2007). Of the nests located on beaches, 6 of 12 chicks (50 percent) successfully fledged, whereas 3 of 3 chicks (100 percent) fledged on the gravel bars (Colwell et al. 2009). Of the chicks that die, most (82 percent; $n=33$ chicks) succumb within 10 days of hatching (Colwell et al. 2004).

In 2009, males breeding in Recovery Unit 2 fledged 0.90 ± 1.45 chicks (Colwell et al. 2009). In 1 of the past 9 years, annual reproductive success for Recovery Unit 2 exceeded 1.2 to 1.3 fledged chicks per male (1.7 fledged per male in 2001) (Colwell et al. 2009), which is the recovery plan target for an increasing population, assuming adult survival of at least 76 percent and juvenile survival of 50 percent (Nur et al. 1999). The 9-year (2001-2009) average productivity for Recovery Unit 2 has been 0.9 chick fledged per male. In 2009, beach-nesting males continued to exhibit low fledging success (0.75 ± 1.39 fledglings per male) compared to males nesting on the Eel River gravel bars (1.50 ± 2.12 fledglings per male) (Colwell et al. 2009).

Gravel bar nesting males have consistently exceeded the target of producing 1.2 to 1.3 chicks. However, the reproductive success for beach nesting males has been below the target necessary to maintain a stable population. This suggests that beaches in Recovery Unit 2 may be sink habitats (Colwell et al. 2005b). Sink habitats are areas where local mortality exceeds local reproduction and without immigration populations in these local areas will continue in a downward trend (Meffe et al. 1994).

Reproduction in Recovery Unit 2 is well below the level necessary to sustain the population and each year immigrants comprise a significant portion of the breeding population (Colwell et al. 2007). In recent years, the population has shifted away from high quality habitat on the Eel river gravel bars to beaches, where poor productivity is insufficient to maintain the population (Colwell et al. 2007). High water in late spring affects the availability of habitat on the Eel River gravel bars. In 2009, the number of breeding males (10) in Recovery Unit 2 was well below the recovery target of 75 males (population target of 150 and assuming a 1:1 sex ratio). Therefore, in addition to producing few chicks per male, the recovery unit had a low number of males and low adult survival. Increasing the current population size will require relatively high productivity, juvenile survival, and adult survival. To achieve this objective, intensive management of breeding areas will be required.

Wintering Habitat - Amount and Distribution

The recovery plan identifies 14 wintering locations in Recovery Unit 2 that are important for recovery (Table 6). Potential winter habitat is distributed in Recovery Unit 2 as follows: 12 miles of coastline (1,700 acres) in Del Norte County; 57 miles of coastline (5,000 acres) in Humboldt County; and 10 miles of coastline (1,925 acres) in Mendocino County (U.S. Fish and Wildlife Service 2007).

Plovers overwinter at many breeding sites; therefore, wintering habitat is also threatened by human disturbance and encroachment of European beachgrass.

Wintering Population (Numbers and Distribution)

Between 1979 and 1985, statewide censuses of wintering plovers were conducted in California and Oregon (Page et al. 1986). During these censuses, 89 wintering plovers were recorded in Recovery Unit 2, based on the median of the maximum number of plovers counted yearly (Table 6) (Page et al. 1986). Winter window surveys in Recovery Unit 2 recorded 155 adult plovers in 2001; 123 plovers in 2002; 168 in 2003; 147 in 2004; and 87 in 2005 (Table 6).

The recovery plan identifies 13 wintering locations in Recovery Unit 2 that are important for recovery. During the 2008-2009 winter window surveys, plovers occurred at 7 of these sites (54 percent) (Table 6). From 2003 through 2009, no plovers have been sighted during any winter window survey at 5 of the sites (38 percent) (Table 6).

Conservation Needs/Strategy Recovery Unit 2

The recovery plan identifies management goals for the number of breeding adults in Recovery Unit 2 (U.S. Fish and Wildlife Service 2007, Appendix B, Table B-1) (Table 4). Management goals are about 20 percent higher than the recovery criteria subpopulation sizes. The recovery plan also identifies the following delisting criteria for Recovery Unit 2: 1) maintain for 10 years an average of 150 breeding adults; 2) maintain a yearly average productivity of at least 1.0 fledged chick per male in the last 5 years; and 3) mechanisms have been developed and implemented to assure long-term protection and management of breeding, wintering, and

migration areas to maintain the subpopulation size and average productivity specified in Criteria 1 and 2.

ENVIRONMENTAL BASELINE (in the Action Area): Western Snowy Plover

Regulations implementing the Act (50 CFR §402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process. As stated earlier, the action area for this consultation includes the following four beaches; Freshwater Spit/Beach, Mussel Beach, Gold Bluffs Beach, and Crescent Beach.

Conservation Needs/Strategy-Action Area

The Parks' 2003 conservation strategy for managing threatened and endangered species identifies management activities to minimize, reduce, or eliminate the potential for incidental take from the effects of noise disturbance, habitat removal or degradation, and corvid predation as a management goal (Redwood National and State Parks 2003). The Parks' 2005 management strategy for western snowy plovers states that it is the Parks' policy to protect the western snowy plover, to the greatest extent possible (Redwood National and State Parks 2005). The strategy states that all reasonable measures will be used to minimize the harassment of western snowy plovers and alteration of their habitat by the presence of humans, while accommodating human use of the Parks' beaches to the degree possible (Redwood National and State Parks 2005).

Only two of the 14 important nesting locations identified in Recovery Unit 2 (Table 4) occur on lands managed by Federal agencies. The two nesting locations are Gold Bluffs Beach, managed by the Parks; and the South Spit of Humboldt Bay, managed by the Bureau of Land Management. Section 7(a)(1) of the Act, directs Federal agencies to carry out their programs for the conservation of listed species. The Service expects Federal agencies to actively aid in listed species recovery and to serve as an example for non-Federal landowners. It is our hope that the small plover population on Federal beaches in Recovery Unit 2 will increase in size.

Current Conditions within the Action Area

Habitat and Population

Breeding Habitat - Amount and Quality

The Parks contain approximately 1,029 acres of beach habitat; however, much of it has been compromised due to the presence of European beachgrass. According to the biological assessment, the best plover breeding habitat occurs on the northern end of Gold Bluffs Beach. Restoration activities to remove beachgrass have occurred on the northern portion of Gold Bluffs Beach. Freshwater Spit and the adjacent beach to the north also appear to provide good quality breeding habitat. Freshwater Spit and Gold Bluffs Beach account for approximately 669 acres of

the Parks' available breeding habitat. Known threats to plovers in the Parks include vehicles on the wave slope, unleashed dogs, visitor recreational activities, and predators.

Since 2004, plovers have been sighted on Gold Bluffs Beach during the breeding season; the majority of the observations have been north of the section of the beach that lies due west of the Fern Canyon parking area (Holm 2004; Holm 2005; Holm 2006). According to the biological assessment in 2004 and 2005, all but two of the sightings were in the area between Squashan Creek and approximately 0.5 mile north of the mouth of Fern Canyon; one of the other locations was south of Espa Creek (2004), and one was in front of the Gold Bluffs Beach Campground (2005).

Breeding Population (Numbers, Distribution, and Reproduction)

Plover numbers are difficult to compare from year-to-year because of variations in survey efforts. There are very few historic observations of plovers and no historic records of nests on the Parks' beaches. According to the Parks' 2008 biological assessment, there are two records of plovers in June 1960 and numerous summer observations in the early 1980s. Gold Bluffs Beach was surveyed on June 3, 1977, no breeding plovers were observed (Page and Peaslee 1977). In 1993, Parks' staff conducted a limited breeding season survey of beaches in the Parks. In 1996 and 1997, the Parks began annual winter and breeding season surveys.

In January 2004, two plovers were detected on Gold Bluffs Beach for the first time since the mid-1980s. On May 24, 2004, an adult plover with two chicks was sighted on Gold Bluffs Beach. One of the chicks fledged on June 23. The fate of the other chick was unknown. The male was observed later in the season in Oregon attending another nest. In 2005, a pair of plovers nested in early May but the nest failed within a few days of the estimated hatch date for unknown reasons. Overall in 2004 and 2005, four breeding plovers initiated two nests, which produced two chicks and fledged one juvenile. Male fledgling success during this period was 0.5 fledglings per male which is well below the target of 1.2-1.3 fledglings per male necessary for an increasing population. No known breeding attempts have occurred at Gold Bluffs Beach since the 2004-2005 breeding seasons. However, in 2006 up to five plovers were present through March and in 2007 up to three plovers were present until May.

Wintering Habitat and Population

The Service has identified Gold Bluffs Beach as a wintering area that is important for recovery of the plover (U.S. Fish and Wildlife Service 2007). Yocum and Harris (1975) noted plovers as occurring regularly on Gold Bluffs Beach. Between 1979 and 1985, winter surveys conducted along the California coast detected plovers on Gold Bluffs Beach during two out of three winters (Page et al. 1986). The yearly maximum number of plovers detected during this period was nine (Page et al. 1986). According to the 2008 biological assessment, there were numerous observations of wintering plovers in the early 1980s.

In January 2004, two plovers were detected on Gold Bluffs Beach for the first time since the mid-1980s. Over the next few months between one and three adult plovers were observed; however, leg bands indicated that at least five different individuals were present during this

period. Plovers returned to Gold Bluffs Beach in January 2005, and were observed regularly throughout the winter and spring. Based on leg bands, at least eight different individuals were sighted during winter 2004-2005. According to the biological assessment, the following numbers of plovers were sighted during the past five winters on Gold Bluffs Beach in the area north of Fern Canyon: winter 2005-2006, eight plovers; winter 2006-2007, nine plovers; winter 2007-2008, 3 plovers; winter 2008-2009, 3 plovers, and winter 2009-2010, 4 plovers.

EFFECTS OF THE ACTION

This section presents an analysis of the direct and indirect effects of the proposed action on the western snowy plover, together with the effects of other activities that are interrelated or interdependent with the proposed action. These effects are evaluated along with the environmental baseline and the predicted cumulative effects to determine the overall effects to the western snowy plover. The proposed action has the potential to adversely affect nesting and non-nesting adults, eggs, and chicks during the breeding season, and adults during the migrating and wintering seasons.

Likelihood of Species Presence

The Parks contain approximately 1,029 acres of potentially suitable plover habitat. During the past six breeding seasons, a pair of plovers nested on Gold Bluff Beach during two years (2004 and 2005). Wintering plovers have been observed on Gold Bluffs Beach every winter for the past 7 years (2003-2004, 5 plovers; 2004-2005, 8 plovers; 2005-2006, 8 plovers; 2006-2007, 9 plovers; 2007-2008, 3 plovers; 2008-2009, 3 plovers, and 2009-2010, 4 plovers).

Habitat Modification

Scientific Basis for Habitat Modification

Vehicles may degrade western snowy plover habitat by creating ruts that can trap or impede movements of plover chicks. Ruts created by vehicle tracks make it difficult for chicks to avoid oncoming vehicles, horses, unleashed dogs, predators, and other hazards.

Effects of the Action – Habitat Modification

Habitat Removal

The proposed action would not remove any suitable plover habitat.

Habitat Degradation

There are approximately 669 acres of suitable plover habitat on Freshwater Spit and Gold Bluffs Beach. The proposed vehicle use may reduce the suitability of this habitat by creating ruts from tire tracks. The impact of the habitat degradation on the plover is expected to be insignificant because of the low level of vehicle use.

Disturbance

Scientific Basis for Disturbance Effect

Disturbance from human presence and vehicles during the breeding season may potentially disrupt the species' essential breeding behaviors by causing: 1) abandonment of the breeding effort by failure to initiate nesting or to complete incubation; 2) separation of adults from their broods; and 3) adults and broods to stay away from favored foraging areas. Disturbance during the wintering season may potentially disrupt the plovers' foraging and roosting activities, thereby decreasing energy reserves needed for migration and reproduction in the subsequent nesting season. The effects of disturbance depend on the frequency, timing, location, and intensity of human activities.

Vehicle use may prevent plovers from using habitat that is otherwise suitable. Research on piping plovers (*Charadrius melodus*), a small shorebird closely related to the western snowy plover, has shown that beaches open to vehicles during the nesting and brood-rearing periods generally have fewer plovers breeding than available habitat can support (U.S. Fish and Wildlife Service 1996). Piping plover abundance and productivity has increased on beaches where vehicle restrictions during chick-rearing periods have been combined with protection of nests from predators (U.S. Fish and Wildlife Service 1996).

Vehicles may impact remote stretches of beach where human disturbance would be minimal if access were limited to pedestrians only. Hoopes et al. (1992) found off-road vehicles caused piping plovers to flush or move at an average distance of 44 yards. Off-road vehicles within 55 yards of the birds caused piping plovers to stop feeding 77 percent of the time. While most responses by piping plovers to off-road vehicles resulted in movement by the birds, they observed three instances where the plovers "froze" in response to the vehicles. Both types of responses have a negative impact on plovers through either disturbance, interruption of feeding behavior, or increasing the risk that plovers will be hit or crushed by vehicles.

Management activities that increase human disturbance may reduce the functional suitability of nesting, roosting, and foraging areas (USDI Fish and Wildlife Service 1999). Concentrations of people may deter plovers and other shorebirds from using otherwise suitable habitats (U.S. Fish and Wildlife Service 2007). Repeated intrusions by people into nesting areas may cause birds to move into marginal habitats where their chances of reproductive success are reduced (U.S. Fish and Wildlife Service 2007). Lafferty et al. (2006) studied plovers in Santa Barbara before and during a period when a barrier directed pedestrians away from a section of upper beach where plovers occur. Before protection, plovers did not breed on the beach. During protection, plovers bred in increasing numbers and had high success fledging young.

Effects of the Action - Disturbance

The Parks' proposal allows permitted vehicle access to the waveslope throughout the year during the day when plover adults, nests, and/or chicks are present and during the night when adults and nests are present. Vehicle beach access could result in disturbance to breeding and wintering plovers. Disturbance will be minimized by the establishment of temporary nest, brood, and winter

protection areas. These protection areas would only be established when known nests, brood, or winter concentration areas are identified. Nesting plovers and broods prior to discovery and all plovers and broods outside of the protection areas will be subject to disturbance from vehicles.

Depending on the amount of vehicle use and compliance with proposed restrictions, the proposed activity may also cause plovers to avoid otherwise suitable habitat. Most recent plover activity has occurred primarily in the relatively remote northern end of Gold Bluffs Beach where recreational pedestrian use is low. However, this is a prime fishing area where most of the permitted vehicle use is observed.

None of the temporary protection areas include the waveslope. Restricting driving to the waveslope does not protect plovers using the foraging and brood rearing habitat on the waveslope. As a result, even with full compliance with the waveslope driving restriction, disturbance to breeding and wintering plovers on the waveslope is still likely to occur.

Disturbance could flush roosting and foraging plovers, preclude nesting, or cause abandonment of a nesting attempt prior to discovery. Therefore, we anticipate that all snowy plovers using the Parks' beaches may experience some increased levels of disturbance from vehicles.

Direct Injury or Mortality

Scientific Basis for Direct Injury or Mortality

The recovery plan (U.S. Fish and Wildlife Service 2007) summarizes the potential ways recreational activities may cause mortality of plovers. Plover chicks and eggs are highly cryptic, making them difficult to see, even at close range. Many species that predate on plover chicks are visual predators. When in the presence of danger, plover chicks tend to "freeze" in place and rely on their cryptic plumage for safety. Pedestrians, vehicles, dogs, and horses on the beach may crush highly cryptic eggs or chicks and chase adults off their nests. Separation of adults from their nests and broods can cause mortality through exposure of eggs or chicks to heat, cold, blowing sand, and/or predators. Recreation use may keep incubating adults off nests during strong winds, allowing eggs to be buried or scattered (Warriner et al. 1986). Recreational and vehicle activities on the waveslope may disturb adults or broods, which feed at the edge of the water.

Vehicles on beaches are of particular concern because of the increased likelihood of harm to eggs, chicks, and adults. Although plovers probably reneest as readily after a nest has been driven over as when a nest is destroyed by natural causes, the added hazard of vehicles may be great enough to depress nesting success below the level needed to maintain the population (Page et al. 1977). Adults and chicks have been observed using tire tracks for loafing, increasing their chances of being run over. Furthermore, vehicle ruts in soft sand can reduce a chick's ability to avoid an oncoming vehicle by functioning as an obstacle to movements. Plover chicks are unable to fly until approximately 4 weeks after hatching. Night-time driving is considered especially hazardous for plovers because of the plovers' inability to judge the speed or distance of an oncoming vehicle due to low light conditions and glare from headlights.

Circumstantial evidence indicates nests have been crushed by vehicles at Clam Beach/Little River in 1998 and 2002. A vehicle crushed an active nest on the Eel River gravel bars in 2002 (U.S. Fish and Wildlife Service unpublished data). Vehicles crushed adult plovers at Vandenberg Air Force Base and Oceano Dunes State Vehicular Recreation Area in 1994 and 1998, respectively. All-terrain vehicles have run over and killed plover adults at Vandenberg Air Force Base and State park ranger patrol vehicles have crushed plover chicks at Oceano Dunes State Vehicular Recreation Area at night (R. Mesta in litt. 1998 as cited in U.S. Fish and Wildlife Service 2007). Biologists documented 14 incidences in which 18 chicks and two adult piping plovers were killed by vehicles on the Atlantic Coast between 1989 and 1993 (Melvin et al. 1994). Piping plover chicks and adults were killed by vehicles even on beaches with relatively little vehicle use (≤ 5 to 10 vehicle passes per day) or where intensive management was in place to protect plovers (Melvin et al. 1994). Piping plover biologists believe that more chicks are killed by vehicles than are reported, since a small sand-colored chick runover by a vehicle would be very difficult to find (Melvin et al. 1994).

It is rare to witness chick loss or find direct evidence of mortality; however, monitoring in 1999 and 2000 at Point Reyes National Seashore suggests that increased human recreation over weekends and holidays negatively affects chick survival (Ruhlen et al. 2003). No beach driving is authorized at Point Reyes National Seashore. Ruhlen et al. (2003) found that weekend and holiday chick loss was 72 percent greater than expected in 1999, and 69 percent greater in 2000 when compared to weekday losses. Similar results were documented at Clam Beach/Little River in 2001 when half the chicks in three broods died during the 4th of July week (Colwell et al. 2001).

The disappearance of chicks at Clam Beach/Little River in areas where vehicle play occurred suggests that uncontrolled vehicle use off the waveslope is responsible for some chick mortalities (Colwell et al. 2003). The disappearance of a large proportion of young chicks from the brooding area at Clam Beach/Little River corresponded with frequent illegal vehicle use, especially at night (Colwell et al. 2003). In 2004-2007, a brood area on Clam Beach/Little River was fenced with symbolic fencing and there was a night-time closure for vehicle use. During 2004-2007 breeding seasons, 37 percent of chicks (n=41) survived, compared to 15 percent (n=33) during the 2001-2003 breeding seasons when no fence and night-time driving restriction were in place (Colwell et al. 2007). The fence appears to be effective in providing a refuge for breeding plovers.

Effects of the Action – Direct Injury or Mortality

The Parks' proposed action allows vehicles to access the waveslope throughout the year during the day when plover adults, nests, and chicks are present and during the night when plover adults and nests are present. Most vehicle use on the Parks' beaches occurs during the peak smelt runs. These runs occur during the plover breeding season, at night from March through June and during the day from May through August.

The Parks' are implementing the following measures to protect plover nests: restricting vehicles to the waveslope, establishing temporary nest protection areas, and conducting plover surveys. If a nest is undetected by surveyors, as occurred in 2004, and located directly above the waveslope

or out-of compliance vehicles drive above the waveslope, nests will be vulnerable to destruction by vehicles. However, because of the Parks' commitment to conduct surveys and establish temporary nest protection areas, we do not anticipate that plover nests will be destroyed by permitted vehicles.

The Parks are also proposing establishment of temporary winter, plover, and brood protection areas; however, none of these protection areas prohibit vehicles from driving on the waveslope. Therefore, foraging adults and chicks on the waveslope will be vulnerable to injury or mortality by vehicles. The Piping Plover Atlantic Coast Population Recovery Plan (U.S. Fish and Wildlife Service 1996) and Melvin et al. (1994) recommend banning recreational vehicles and all but essential administrative vehicles on beaches when unfledged piping plover chicks are present. The piping plover recovery plan also recommends that essential vehicles should travel through chick habitat only during daylight hours, be guided by a qualified monitor, and their speed should not exceed 5 mph. The Parks' proposed action does not allow night time driving when chicks are present and requires a speed limit of 5 mph in nest and brood protection areas.

The effectiveness of the proposed minimization measures will depend on the level of compliance and enforcement. Compliance with established rules for vehicle access has proven to be a challenge for the Parks in the past. In 2005 through 2009, vehicle tracks have been observed above the waveslope on 0 to 42 percent of the Parks' plover surveys on Gold Bluffs Beach. Surveys have shown that even a relative small number of vehicles can produce many tracks in suitable nesting habitat. At times vehicle tracks have covered much of the upper sandy beach area of Gold Bluffs Beach. It is difficult to restrict vehicles to the waveslope during high tides. Since fishing generally begins 1 hour after the high tides begin to recede, it is not surprising that vehicle tracks occur in the dry sand. Any plover adults, chicks, or unknown nests occurring in these areas of unauthorized use will be vulnerable to death or injury. According to the biological assessment, Parks' law enforcement is aware of the problems occurring on the beach in association with vehicle access and makes every attempt to enforce park regulation. However, staffing levels do not provide for consistent ranger patrols especially at night and during the busy visitor season. The proposed action continues the past level of law enforcement. There are no specific records of vehicles colliding with plovers on the Parks' beaches; however, it is unlikely that a small sand-colored bird that has been crushed in a tire rut would be detected. Although, the frequency of violations (e.g., vehicles driving above the waveslope) provides some indication of the potential for vehicles colliding with plovers.

We anticipate that plover chicks will be the life stage most vulnerable to injury or mortality by vehicles. The temporary brood protection areas will provide some protection for broods when they are within the boundaries of the established areas. However, there is little protection for broods outside of these areas and on the waveslope. Flightless chicks are especially vulnerable to collision with vehicles because of their cryptic coloring, inability to fly, tendency to "freeze" in place to avoid danger, and habit of crouching in depressions such as tire ruts. Broods hatching from undetected nests will be especially vulnerable during the period between hatching and detection by plover surveyors.

The likelihood of adult plovers being injured or killed as result of the proposed vehicle beach access is expected to be relatively low due to the limited number of adult plovers present on the

Parks' beaches, the ability of adult plovers to avoid collision with vehicles, relatively low number of vehicles, expectation that the number of commercial fishing permits on Gold Bluffs Beach will continue to decline, and proposed minimization measures such as the requirement for commercial fishermen to receive training on plover biology and identification. However, the required training is not expected to significantly lessen the potential for collisions with plovers at night and in the fog when visibility is limited. The loss of even a small number of breeding adults may have significant impacts on population viability.

The minimization measures are expected to minimize the likelihood of collisions with adult plovers and eggs; however, we expect that chicks will still be vulnerable. Any chicks on the waveslope may encounter vehicles and any broods that leave the brood protection areas will be subject to vehicles traveling up to 20 mph. Therefore, we anticipate that plover chicks are likely to be killed or injured by vehicles. We anticipate that as a result of the proposed action one plover chick may be killed or injured every other breeding season.

Indirect Effects – Increased Risk of Predation

Indirect effects are defined as those effects that are caused by or will result from the proposed action at a later time, but are still reasonably certain to occur (50 CFR 402.02).

Scientific Basis for Increased Risk of Predation

Predation has been identified as a major factor limiting western snowy plover reproductive success at many coast sites (U.S. Fish and Wildlife Service 2007). Predation, while predominately a natural phenomenon, is exacerbated through the introduction of nonnative predators and unintentional human encouragement of larger populations of native predators (U.S. Fish and Wildlife Service 2007). Breeding Bird Surveys and Christmas Bird Count data have documented substantial increases in populations of common ravens and American crows in California over the last 30 years (Liebezeit and George 2002). Corvids are the most significant cause of low productivity of plovers nesting on beaches in Recovery Unit 2 (Colwell et al. 2006).

Beach litter, garbage, bait, and catch from fishing attract plover predators such as corvids, gulls, and skunks and encourage their habitation at higher numbers than would naturally occur. Predation can result in the direct loss of adults, chicks, or eggs or the separation of chicks from adults. Substantial evidence exists that human activities are affecting numbers and activity patterns of predators (Lafferty 2001). Recreational use and fishing activities draw predators to the beach, where they search for food or waste left behind by people. A high correlation exists between human use of nesting habitat and predation on western snowy plovers (U.S. Fish and Wildlife Service 2007).

Effects of the Action – Increased Risk of Predation

The Parks' 2005 management strategy for western snowy plovers includes the following measures to address predator concerns: plover signs will be mounted so as not to provide predator perches; nest predator exclosures will be installed if necessary; corvid proof trash

containers are present in Gold Bluffs Beach Campground; and outreach efforts are occurring to reduce attraction of predators.

Nest exclosures may provide eggs some protection from predators and increase hatching success; however, there are risks associated with predator exclosures. Potential risks include increasing the risk of predation for incubating adults within exclosures and encouraging breeding plovers to nest in low quality nesting habitat where hatching success is high but fledging success is low (Colwell et al. 2006). Nest exclosures have been successfully used to limit predation of eggs; however, exclosures are not a long-term solution to poor productivity.

We anticipate that indirect effects to plovers will be minimized through implementation of the Parks' proposed measures.

Summary of Project Effects on Numbers, Distribution, and Reproduction

The proposed action may affect the number and productivity of plovers in the action area by causing direct mortality of chicks and disturbance of breeding, wintering, and migrating plovers. We anticipate that the following aspects of the proposed action will help to minimize some of the adverse impacts to plovers: restriction of vehicles to the waveslope, prohibition of night time driving when chicks are present, establishment of temporary plover protection areas, and plover surveys and monitoring.

As stated previously, 19 breeding plovers occurred in Recovery Unit 2 in 2009. This number is substantially below the recovery plan's management goal of 200 breeding adults. During the 2004 and 2005 breeding seasons, 2 adult plovers nested annually on Gold Bluffs Beach. Male fledgling success during this period was 0.5 fledgling per male which is well below the target of 1.2-1.3 fledglings per male necessary for an increasing population. Since 2005, no plovers have nested on Gold Bluffs Beach. During the past five winters, plovers were sighted annually on Gold Bluffs Beach.

The proposed vehicle use will affect breeding and wintering plovers in the Parks. Plovers will be affected by day and night-time vehicle use. The effectiveness of the minimization measures will depend on the level of compliance and law enforcement. This analysis of effects and our conclusions are based on the expectation that adequate surveys will be conducted, management measures will be effective and implemented, and that timely action will be taken to revise management strategies if the measures fail to minimize impacts. However, even with complete compliance with the proposed measures, adverse impacts to plovers are likely to occur. Vehicles could harm chicks, or disturb nesting activities, chick rearing, and/or foraging. As a result, we expect that this action will result in lower productivity on the Parks' beaches.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur within the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Federal or State Park activities that occur within the Parks' boundaries will have a Federal nexus and require section 7 consultation with the Service. There are no private or Tribal lands within the action area; therefore, cumulative effects would not be likely for activities within the action area. The Klamath Spit is within the Parks' boundary, but not within the action area. Access to the beaches that make up the spit is privately owned. The Parks do not regulate use of this property including vehicle access to it. The beaches are open to vehicle use at all times. Suitable plover habitat occurs on the beaches; however, there are no recent known observations of plovers. It is unknown whether plovers historically nested or wintered on the spit.

CONCLUSION

After reviewing the current status of the western snowy plover, the environmental baseline, the effects of implementing the proposed vehicle beach access in the Parks, and the cumulative effects, it is the Service's biological opinion that implementation of vehicle beach access in the Parks is not likely to jeopardize the continued existence of the western snowy plover. Critical habitat for the western snowy plover has been designated outside of the Parks; however, this action does not affect that area and no destruction or adverse modification of that critical habitat is anticipated.

The Service reached the non-jeopardy conclusion based on the following factors:

1. The proposed action will not remove suitable western snowy plover habitat.
2. The Parks' beaches will continue to provide habitat for resting, foraging, and nesting western snowy plovers.

INCIDENTAL TAKE STATEMENT

INTRODUCTION

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the taking of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the

agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Parks so that they become binding conditions of any grant or permit issued to an applicant, as appropriate, for the exemption of 7(o)(2) to apply. The Parks have a continuing duty to regulate the activity covered by this incidental take statement. If the Parks (1) fail to assume and implement the terms and conditions or (2) fail to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Parks must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR 402.14(i)(3)]

AMOUNT OR EXTENT OF TAKE

Western snowy plovers are small, cryptically-colored birds that are difficult to detect. Finding dead or injured individuals is difficult. The patterns of seasonal presence are complex with breeding individuals and their young present in spring and summer and migratory or wintering individuals present in fall and winter. Consequently, anticipating the precise number of western snowy plovers that may be taken as a result of the Parks' vehicle beach access in any given year or over the course of several years is difficult.

The Service anticipates incidental take in the form of:

Harassment – due to disturbance of up to 4 breeding adults and their broods annually during the 5 breeding seasons (2010 through 2014) and up to 15 migrating or wintering adults annually for 5 wintering seasons (2010/2011 through 2014/2015); and

Injury or death – in the form of direct mortality due to vehicle use of no more than one plover chick every other breeding season for a total of two plover chicks during the period encompassing the 2010 through 2014 breeding seasons.

We based this anticipated amount of take on past survey results of the number of annual breeding and wintering plovers on the Parks' beaches.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the western snowy plover, or destruction or adverse modification of critical habitat for the western snowy plover.

REASONABLE AND PRUDENT MEASURES

The Service believes the impacts of the proposed action largely will be minimized by compliance with measures incorporated in the project design. Consequently, no reasonable and prudent measures are necessary.

TERMS AND CONDITIONS

As mentioned above, the Service considers the measures incorporated in the project design to be sufficient to minimize take of western snowy plovers; therefore, no terms and conditions are necessary.

MONITORING REQUIREMENTS

In order to monitor the impacts of incidental take, Parks must report the progress of the action and its impacts on the species to the Service, as specified below.

1. At the end of each calendar year, the Parks will provide to the Service the commercial beach fishermen and tribal permittees' logs of all beach trips as described in minimization measure number 3 in the project description of this biological opinion.
2. At the end of each calendar year, the Parks will provide to the Service a summary of all law enforcement patrols conducted when plovers are nesting or have broods. The summary will include the date and time of patrols, area patrolled, and any compliance issues noted, contacts, or citations issued.
3. At the end of each calendar year, the Parks will provide information about vehicle activity levels, violations, and vehicle tracks. Sources for this information will be park ranger patrol logs, permittee beach access logs, and observations gathered while conducting marine mammal, seabird carcass, and plover surveys.
4. At the end of each calendar year, the Parks will provide a copy of their annual plover progress report. In addition to a discussion of plover activity on the Parks' beaches, this report will discuss implementation of minimization measures and conservation recommendations.

REPORTING REQUIREMENTS

Any dead or injured western snowy plover must be reported to the Service's Law Enforcement Division (916-979-2987) or the Arcata Fish and Wildlife Office as soon as possible, and turned over to the Law Enforcement Division or a game warden or biologist of the California Department of Fish and Game for care or analysis. The Service is to be notified in writing within three working days of the accidental death of, or injury to, a western snowy plover or of the finding of any dead or injured western snowy plovers during implementation of the proposed action. Notification must include the date, time, and location of the incident or discovery of a dead or injured western snowy plover, as well as any pertinent information on circumstances surrounding the incident or discovery. The Service contact for this written information is the Field Supervisor for the Arcata Fish and Wildlife Office at (707) 822-7201.

COORDINATION OF INCIDENTAL TAKE WITH OTHER LAWS, REGULATIONS, AND POLICIES

The incidental take statement provided in this biological opinion satisfies the requirements of the Act. The Service will not refer the incidental take of any migratory bird or bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 668-668d), if such take is in compliance with the terms and conditions, including the amount and/or number specified herein.

CONSERVATION RECOMMENDATIONS

Sections 2(c) and 7(a)(1) of the Act direct Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species and the ecosystems upon which they depend. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service has identified the following conservation recommendations which could be implemented by the Parks:

The Parks should coordinate with the Service to implement key recovery actions identified in the western snowy recovery plan.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed, proposed, or candidate species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on vehicle beach access in the Parks. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operation causing such take must cease pending reinitiation. If you have any questions regarding this biological opinion, please contact Robin Hamlin of my staff at (707) 822-7201.

cc:

RNSP, Orick, CA (Attn: K. Schmidt)

CDPR, Eureka (Attn: A. Transou)

CDFG, Eureka, CA (Attn: W. Condon)

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TABLES

Table 1. Number of adult plovers counted during breeding season window surveys along the California coast during surveys from 1977 to 2005.

Year	Adult Plovers Counted
1977-1980 ¹	1,566
1989 ²	1,386
1991 ³	1,371
2000 ³	976
2002 ³	1,387
2003 ³	1,444
2004 ³	1,904
2005 ³	1,680
2006 ³	1,816
2007 ³	1,362
2008	1,399
2009	1,405

¹ Page and Stenzel 1981;² Page et al. 1991;³ U.S. Fish and Wildlife Service, unpublished data**Table 2.** Estimated plover population size for the six recovery units (Nur et al. 1999).

Recovery Unit	Estimated Population Size
Washington and Oregon (Unit 1)	134
Del Norte through Mendocino Counties (Unit 2)	50
San Francisco Bay (Unit 3)	264
Sonoma through Monterey Counties (Unit 4)	300
San Luis Obispo through Ventura Counties (Unit 5)	886
Los Angeles through San Diego Counties (Unit 6)	316
Total	1,950

Table 3. Rangewide breeding season window survey results. Results are for the 2009 breeding season (U.S. Fish and Wildlife Service unpublished data).

Recovery Unit	Adult Plovers Counted
Washington and Oregon (Unit 1)	182
Del Norte through Mendocino Counties (Unit 2)	15
San Francisco Bay (Unit 3)	147
Sonoma through Monterey Counties (Unit 4)	279
San Luis Obispo through Ventura Counties (Unit 5)	707
Los Angeles through San Diego Counties (Unit 6)	257
Total	1,587

Table 4. Management potential at important nesting locations in Recovery Unit 2 and the number of breeding plovers counted during the 2009 breeding season (U.S. Fish and Wildlife Service 2007; Colwell et al. 2009).

Western Snowy Plover Recovery Unit 2			
Location	Management Potential (adult birds) ¹	2009 Surveys	
		Breeding birds	Percent of goal
DEL NORTE COUNTY			
Smith River Mouth	8	0	0
Lake Earl	10	0	0
Subtotal	18	0	0
HUMBOLDT COUNTY			
Gold Bluffs Beach ²	NA	0	NA
Stone Lagoon ²	NA	2	NA
Big Lagoon	16	0	0
Clam Beach/Little River	6	19	310
Mad River Mouth and Beach	12	5	42
Humboldt Bay, North Spit	8	0	0
Humboldt Bay, South Spit			
Eel River North Spit (Eel River WA)	50	3	1
Eel River Mouth to Van Duzen	40	4	10
Eel River, South Spit and Beach (Centerville Beach)	20	0	0
McNutt Gulch	10	0	0
Subtotal	162	19 ³	12
MENDOCINO COUNTY			
MacKerricher State Park	20	0	0
Manchester State Park ²	NA	0	NA
Subtotal	20	0	0
TOTAL	200	19 ³	9.5

¹ The management potential in the recovery plan is about 20 percent higher than the recovery criteria subpopulation sizes.

² The recovery plan does not establish a management potential for the number of breeding adult birds at Gold Bluffs Beach, Stone Lagoon, or Manchester State Park.

³ The total may not equal the sum of individual sites, since some birds may occur at more than one site.

Table 5. Number of adult plovers and number of sites where adults were located during the breeding season window surveys, 1977 to 2009 (U.S. Fish and Wildlife Service 2009).

No. Adults/No. Sites By Year	Location - County		
	Del Norte	Humboldt	Mendocino
1977 - 1980	11/2	54/6	15/1
1989 ¹	8/?	32/?	2/?
1991	3/1	30/6	0/0
1995	0/0	19/4	4/1
2000	0/0	39/3	1/1
2002	0/0	49/4	0/0
2003	0/0	38/4	1/1
2004	0/0	37/4	3/1
2005	0/0	32/5	9/2
2006	0/0	42/6	3/1
2007	0/0	23/4	3/2
2008	0/0	18/3	0/0
2009	0/0	15/4	0/0

¹ Adult plover numbers are from Page et al. (1991). Data were presented by county with no site specific information.

Table 6. Wintering locations in Recovery Unit 2 identified as important for recovery (U.S. Fish and Wildlife Service 2007, Appendix B). Survey data presented are of varying efforts, for example window surveys and monthly surveys. Blanks represent no data.

Location	1979-1985 ¹	1992 ²	1993 ³	1998 ⁴	2003/ 2004 ⁵	2004/ 2005 ⁵	2005/ 2006 ⁵	2006/ 2007 ⁵	2007/ 2008 ⁵	2008/ 2009 ⁵
DEL NORTE COUNTY										
Smith River Mouth					0	0	0	0	0	0
Lake Earl	1				0	0	0	0	0	0
Subtotal	1				0	0	0	0	0	0
HUMBOLDT COUNTY										
Gold Bluffs Beach	2				2	3	5	10	2	4
Stone Lagoon	9			0	0	0	0	0	0	0
Big Lagoon				0	0	0	10	0	6	4
Clam Beach/Little River	11	30	16	40	45	31	52	36	41	30
Mad River, Mouth and Beach					0	0	0	2	0	0
Humboldt Bay, North Spit	2				0	0	0	0	0	0
Humboldt Bay, South Spit	27		9		0	5	1	22	9	7
Eel River Wildlife Area	6	2	6		0	0	0	0	0	0
Eel River, Spit and Beach	6	5			38	1	42	5	40	2
Subtotal	63	35	31	40	85	40	110	75	98	47
MENDOCINO COUNTY										
MacKerricher	23				50	33	41	23	19	33
Manchester					12	14	12	24	0	6
Subtotal	23				62	47	53	47	19	39
TOTAL	86				147	87	163	122	117	86

Table 6 continued.

- ¹ Median of the maximum bird numbers (Page et al. 1986). This paper mentions a report of 6 wintering birds at the mouth of the Smith River; Mad River beach was not completely surveyed.
- ² Median number per survey; Humboldt County surveys in January (Fisher 1992).
- ³ Monthly means; Humboldt County surveys in February (Fisher 1993)
- ⁴ Maximum observed. Surveys were only conducted at Big Lagoon, Stone Lagoon, and Clam Beach/Little River (Griggs 1998).
- ⁵ Window survey data.

